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ABSTRACT

This document contains the following papers on reading, language arts, and literacy from the SITE (Society for Information Technology & Teacher Education) 2001 conference: (1) "Improving the Teaching of Reading, Language Arts and Literacy through WebCT: A Work in Progress" (Linda Akanbi); (2) "A Survey of Computer Software Available in the Current Market for Hispanic Families and Bilingual Educators" (Maria P. Bhattacharjee and Linlin Irene Chen); (3) "Reader Response in the Information Age" (Kelvin G. Broad and George Labercane); (4) "Towards a Reading and Text Production Practice with FL Learners: A Collaborative Text Construction with FL Groups of French, English, and Spanish in the Web via the EquiText" (Janete Sander Costa and others); (5) "The Self Learning System To Support the Teacher of Japanese Language Education" (Makio Fukuda and Tamiaki Nakamura); (6) "Literacy Junction: Exploring Narrative Theory and Books for Youth in a Cyberworld" (Hiller A Spires and others); (7) "The Creation of a Nexus between Telelearning and Teleteaching" (Marc Glassman); (8) "Workplace Literacy with Online Discussions" (Heather Hemming and others); (9) "Virtual Literature Circles: Message Board Discussion for Strengthening Literacy" (David Hofmeister and Matt Thomas); (10) "Art Responding through Technology" (Penny Nolte and others); (11) "Taking Language Arts Instruction to the Applied Level through Integration of Graphic Arts Technology" (Christine D. Reynolds and Carl L. Reynolds); (12) "Use of Telecollaboration To Develop Authentic Learning Experiences for Teacher Candidates" (Regina Royer); (13) "Getting Real in TESP: Operational Technology at Business English Classes" (Tatiana Slobodina); (14) "Movies in English for Specific Purposes: From Entertainment to Excellence" (Tatiana Slobodina); (15) "Technology, Language Arts, and Teacher Preparation: Stacking the Odds of Classroom Use" (Rod Winters); (16) and "Innovative Software-Based Strategies for Reading/Listening Comprehension: How Information Technology Is Reforming Foreign Language Acquisition" (Zhang Senquan). Most papers contain references. (MES)

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# READING, LANGUAGE ARTS & LITERACY

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Collaborative, innovative ways to use technology to support literacy teaching and learning are examined in these papers. Software applications have been designed and developed to enhance instruction for students who are learning foreign languages including Japanese, Chinese, Portuguese, Spanish, French, and English. Some papers focus on learning workplace literacy skills for communicating with technology. University faculty members teaching reading and language arts classes to preservice and inservice teachers describe how they have provided their students with multiple opportunities to collaborate with each other and K-12 students as they explore ways to seamlessly integrate technology into their classrooms. Researchers discuss the online communities of K-12 learners that have been created to furnish students' opportunities to respond to literature in collaborative ways. Web-based resources to enhance literacy learning are described in some of the papers. Papers in this section cover a wide range of literacy topics of interest to faculty members teaching students in kindergarten to graduate level classes.

Fukuda and Nakamura describe the trials and tribulations of designing a learning system to teach middle grade Japanese students Kanji. Their original attempts involved a PDA and eventually the system evolved into a web-based program. The program is designed for either self-study or as an enhancement to classroom teaching and learning. Senquan uses technology to teach reading and listening comprehension strategies in Chinese with *KEY* software. *KEY* is a multimedia reading comprehension tool, which includes a Chinese/English dictionary and a text to speech module. *EquiText*, an interactive groupware tool, allows foreign language learners to participate in collaborative writing activities on the web. Costa, Galli, de Almeida, and Guedes used *EquiText* with Brazilian college students who were learning French, English, and Spanish. Students worked in teams using *EquiText* to produce significant written discourse. This paper reports on promising research using collaborative writing to support students as they learn a foreign language.

Slobodina reports on the integration of technology in a business English class for the English for Specific Purposes (ESP) practitioner. To participate in the world business community, university graduates need to be proficient in both English and technology. In this class students use software and hardware for a variety of authentic learning activities to assure that they are well prepared to meet the challenges of the English speaking international business community. Slobina also explains how movie excerpts are used to demonstrate authentic examples of real-life business communication. Electronic business communication is the focus of Hemming, Symons, and Langille's paper. Their paper describes a course that teaches students workplace literacy skills for communicating via email and discussion groups. Direct instruction is given for electronically explaining/expressing a viewpoint, asking pertinent questions, and writing effective responses. Through guided and independent practice students use the strategies in their coursework.

Bhattacharjee and Chen compiled a list of software available for use in bilingual classrooms. While working with preservice and inservice bilingual teachers as well as parents of bilingual children, these authors discovered that teachers and parents need information about using the computer to support bilingual students' learning. The authors describe software applications to support the literacy learning of bilingual students.

Akanbi has placed graduate course materials for Reading Strategies for the Content Fields in WebCT. Additionally, the WebCT communication tools have been used to establish an online learning community for the teachers enrolled in the class. Glassman shares his experiences with using the web to conduct his undergraduate reading course and explains his distinction between teleteaching and telelearning.

Understanding that preservice teachers need field based opportunities in order to develop their expertise in technology integration, Royer developed a telecollaborative project between preservice teachers and inservice teachers

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and their students. In her study preservice teachers moderated an online writing project for K-12 classroom students and through the experience learned how to integrate technology into the classroom to accomplish curricular objectives. Winters' preservice teachers also had opportunities to experience integrating technology into the classroom curriculum. His students used web-based technology to create reviews of children's books and they corresponded by email with students as they both read and responded to the same novel. The results of these authors' projects indicate that participating in these technology experiences increased the likelihood that their students integrate technology into their future classrooms.

Nolte, Leech, and Monteagudo report on Vermont's innovative online project that provides support and resources for teachers and students. The goal of the project is to improve student performance in the arts, humanities, and social sciences through the collaborative efforts of an online learning community. Another innovative online project is Literacy Junction, an interactive web site for students in third through eighth grades. Cuper, Spires, and Crissman report on how Literacy Junction enhances students' achievement in reading and writing while increasing their technology skills. Hofmeister and Thomas share their research on using Virtual Literature Circles with third and fourth grade students. After reading a shared text, the students responded to the text on an Internet message board. They report on the cognitive complexity of the posted messages and the intellectual continuity of the threaded discussions. Broad and Labercane also used the computer to engage students in collaborative responses to text. The fifth grade students in their study used networked response-based reading and writing activities to extend their learning. They offer useful ideas for others who may be interested in conducting similar research on effective ways to use technology to enhance reading and language arts in the classroom.

Reynolds and Reynolds describe the Literacy Desktop Publishing course designed for high school students. This course offers students advanced opportunities to use technology to improve their reading, writing, listening, and speaking skills. The course content includes graphic arts communication skills required by local business and industry.

These papers examined the multiple literacies required in the classroom and in the workplace. They focused on a variety of ways that technology enhances literacy teaching and learning. A common thread throughout many of the papers is the importance of collaborative online learning.

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# Improving the Teaching of Reading, Language Arts and Literacy through WebCT: A Work in Progress

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**Abstract:** This paper is a description of how WebCT is being used to enhance the delivery of a graduate reading course -- Reading Strategies in the Content Fields – that is part of a Reading Endorsement program for PreK-12 classroom teachers. The course is the third and final reading course in a program designed to address the need to improve reading instruction in pre-kindergarten through grade twelve in the State of Georgia. The course is being delivered online via WebCT, with some "face time" on campus.

## Introduction

In 1999 the University System of Georgia, in conjunction with the Georgia Professional Standards Commission, formed the University System of Georgia Reading Consortium. The consortium was created in response to the state's need to improve reading instruction in PreK-12 schools. Toward this end, the consortium developed the Reading Endorsement to enhance professional development in literacy teaching and learning for practicing PreK-12 educators. Two models, the Reading Institute Model and the Teaching Reading Distance Learning Model, emphasize classroom application and address three strands: Understanding Readers and the Reading Process, Linking Literacy Assessment and Instruction, and Instructional Strategies in the Content Areas Across PreK-12. WebCT was chosen as the vehicle for the distance-learning model. In this model, each course is offered online. In the Summer Institute Model, the major content for all three strands of the program is presented in a three-week format.

Kennesaw State University utilizes a combined delivery model. The first two strands listed above are emphasized in a Summer Reading Institute, and the third strand is the focus of a separate course offered online in the fall. A Literacy Action Plan developed by the teachers at the end of Summer Reading Institute 2000, and tied to their schools' performance goals, serves as the foundation for the Fall semester course– EDUC 7718: Reading Strategies for the Content Fields. The remainder of this paper will be devoted to a description of the design of this course, which is a work in progress even as it is being taught, and a discussion of how WebCT is being used to facilitate its delivery.

## Course Design

This graduate reading course -- *Reading Strategies for the Content Fields* -- is a study of the concepts and specific processing strategies involved in reading and writing in the content areas. It emphasizes development and teaching strategies appropriate for the specific content area and grade level. The purpose of the course is to provide a learning-support network through readings, course seminars, online dialogue and supervised field experience, for reading professionals to examine their philosophies and beliefs, and to apply newly acquired conceptual knowledge as to what constitutes effective literacy instruction for their grade level and/or content area. Teachers are required to collect data to show evidence of student learning, analyze these data, reflect on their teaching and develop strategies for improving learning. These data will be included in a portfolio that teachers must submit at the end of the academic year, indicating that they have successfully met all the requirements for receiving a Reading Endorsement.

## Course Participants

The teachers enrolled in the course represent elementary, middle and high school levels, as well as both public and private schools. One of the elementary practicing professionals is a reading teacher, and so are two of the middle school teachers. There is one male teacher in the group. Two of the teachers are also pursuing a Master of

Education degree in Early Childhood Education (P-5), and they will be able to add the Reading Endorsement to their certificate. The number of years of teaching experience of teachers enrolled in the program ranges from three to fifteen, with the average being five years. The diversity of grade and subject levels, school systems, teaching experience, advanced preparation, and gender represented in the class, lends itself well to the sharing of knowledge and perspectives on different classroom applications of reading and language arts instruction.

## WebCT Course Delivery

Except for three initial class meetings where teachers were oriented to the requirements of the course, trained in the computer lab to use WebCT and Power Point, and two other campus meetings where they had to make class presentations, the teachers have been meeting online for class and to access the content of the course. The instructor utilizes the 3.1 version of WebCT, which includes the following tools: Course Content, Communications, Study Tools and Evaluation Tools. The Course Content tools used in this course consist of the syllabus, calendar, content module, and glossary. The Communications tools utilized include mail, chat and discussions. Study Tools is a feature accessible only to students. The only Evaluation tool currently used by the instructor is the assignment tool. In addition to the primary tools listed above, the instructor has added the following links to the course home page: Reading Online, which is the online journal of the International Reading Association, the International Reading Association organization, the Georgia Department of Education, and the *Atlanta Journal Constitution's* News for Kids. The instructor has also added two pages to the discussions tool under Communications. One page is for teachers to post their teaching reflections, and the other page is for them to post literacy teaching tips that they discover, including useful web sites.

These tools have been used to create an online learning community. Through the WebCT communication tools, which are the most used tools in the course, teachers are able to share their teaching reflections with one another as they try to implement their Literacy Action Plans, learn what is occurring in literacy classrooms different from the level that they are teaching as well as in other classrooms at their own grade level, ask questions and offer one another support. Since all the reflections and responses are made public, by agreement, teachers are also able to read the instructor's reply to each reflection. In addition to reflections, the WebCT communications tools are being used to post discussion questions and responses based on assigned readings, hold online class dialogues and send E-mail. WebCT content modules designed by the instructor, are used to supplement instruction. The other links added to the course home page provide extra resources for teaching; including children's book lists, lesson plans and teaching strategies. In addition, teachers can keep up with the latest trends and research in the field, which helps them to further their professional development in the area of reading.

## Conclusion

Glatthorn (1995) states that there are three groups of factors that seem to influence teacher development: those involving the teacher as a person, those relating to the context in which the teacher lives and works, and those involving specific interventions to foster teacher development (p. 42). The support that teachers receive from one another online and from the instructor makes them feel valued as individuals and helps give them the inner strength and confidence they need to pursue the attainment of their professional development goals.
The teachers' classrooms where they live and work provide the context for the online reflections, and finally, the content of the course provides specific interventions to enhance the teachers' ability to teach literacy. Improved student achievement in reading will be the ultimate criterion measure for the success of this program.

## References

Glatthorn, A. (1995). Teacher Development. In L. Anderson (Ed.), *International Encyclopedia of Teaching and Teacher Education (p. 42)*. Great Britain: Cambridge University Press.

# A Survey of Computer Software Available in the Current Market for Hispanic Families and Bilingual Educators

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**Abstact** This paper concerns computer software currently available in the market for bilingual children. The purpose is to survey the software options available to bilingual children, parents, and teachers. This paper will approach the topic from the following perspectives:

- Sources for Purchasing Software
- Bilingual Reading and Writing Software
- Bilingual Educational Games/Tutorial/Drill, and Practice

## Introduction

During the last decade of the millennium, we have already witnessed a drastic increase in the number of bilingual students in the United States. To face this new change, many school districts are holding school-community activities such as Houston Independent School District's (HISD) Community Parade, featuring the theme, "Education: We Are All In This Together". The goal of these activities is to enhance, support, and encourage parent involvement with schools. Schools all recognize that parents are valued partners in the educational process, serving as the child's teacher in the home. Parents play an important role in reinforcing effective learning strategies and early intervention. Like many other immigrant parents, many Hispanic parents are eager to coach their children at home to adapt to the American culture and new school system, while keeping their cultural heritage.

Keeping their heritage alive and adapting and learning the ways of the American culture increase access to bilingual materials. Nearly 10 % of children ages 5-17 nationwide speak Spanish at home, and as many as 22 % in California and Texas. Teachers today face a challenge of ensuring that students are given a variety of opportunities to be successful in school settings. However, the interaction with new immigrant parents, student teachers in the bilingual education program, and teachers who are currently teaching bilingual students reveals that computer use is one of the topics which is in strong need of clarification and support for this special population. There are many misunderstandings regarding the use of computers in bilingual education. Proper use of computers, however, can not only help bilingual students to fit into their new community and become more productive citizens, but also is an effective tool to retain their cultural heritage.

This paper concerns computer software currently available in the market for bilingual children. The purpose is to survey the software options available to bilingual children, parents, and teachers. This paper will approach the topic from the following perspectives:

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## Sources for Purchasing Software

The first place to locate software titles for bilingual students is still the local computer software stores. The author found that in the Houston area, surprisingly, OfficeDepot carries far more children's titles than any other software store. Although Spanish software is hard to find in this kind of general computer software store many educational titles can be "repurposed" to fit the needs of bilingual students. The term "repurpose" has been used widely in the educational multimedia field for identifying old video clips and reusing them in different settings. The same idea can also be used to turn a piece of software currently available in the market into useful instructional material for bilingual classrooms. Repurposing a popular software title in the current market to fit the special needs of bilingual students probably is the most efficient way for identifying software titles for bilingual classrooms: the price will be cheaper, the software will be more compatible with the exiting bilingual classroom collection, the option is wider, and the software will be more up-to-date.

A pre-service teacher in the bilingual education program, for example, proposed a great idea of repurposing the software, the *Explore Yellowstone* program, by MECC. This software allows a student to take the role of a tourist in the 3,500 square miles national park and explore the mammals, birds, plants, earth science, reptiles and other habitats in this area. The activities offered in the software include interactive virtual trip, field station, experiments, and visitor guidance. The pre-service teacher used *Explore Yellowstone* to plan a lesson. The objective for the lesson was to improve the reading and writing skills of 4$^{th}$ grade bilingual students and to expand vocabulary through reading, writing and listening. According to the lesson plan, the teacher presents a poster board with animal drawings and the definitions or explanation about them. The teacher then directs the attention of students to the advantages they can have with technology by demonstrating the versatility and effectiveness of the software by projecting to the screen a colorful photo of a wild animal and its habitat. The teacher then models for students how this is achieved by clicking different animal names on the menu of the software. A new wild animal and its own characteristics then can be viewed on the screen. The teacher then repeats this step with two or three animals to be sure students understand what the software provides. The activities and procedures proposed in the lesson plan include several steps. Teacher divides the class into small groups of two to three students. Each group selects two to three animals to investigate using the software. The students then discuss several characteristics of each animal (i.e.) color, size, food they eat, weather, habitat peculiarities etc. As a group they pick two characteristics of each animal and write a summary of their findings.

The use of "repurposing" existing software may be the best alternative for bilingual children, parents, and teachers. As this market has developed, more specialized traditional bookstores are carrying software titles that can be integrated with classroom instruction.

Another way to access software is through mail-order that is now popular among teachers. Mail-order from another country sometimes takes time and planning. Special-purposed software and many teacher-created materials can also be purchased either on-line or through catalogues. General online bookstores such as Amazon.com and Borders.com now also carry software titles along with book titles and music titles. Type in the keyword "Spanish" and a list of selection with detail description, user reviews, and screen shots of the software can be viewed. Educational titles online bookstore and software vendors such as Sunburst (at www.sunburst.com), Software World (at www.sofware.com/spanish.htm), and Soleil (at www.soleil.com) have created web sites to offer information and take orders. Users can also purchase from the print-version of the educational software catalogues. However, the software products offered by these companies are mainly for learning the Spanish language. Only www.softonic.com offers a few titles that have instructional application.

## Bilingual Reading and Writing Software

For Hispanic families and bilingual educators, the most basic as well as the most widely used software suites probably is the international version of *MS Office* which includes word processor MS Word, spreadsheet program *MS Excel*, presentation program MS PowerPoint, and database maintenance system *MS Access*. If the whole set of the international version of MS Office is not available, the user can also pay approximately $75.00 to get a Spanish spell checker as an add-on to the English-standard *MS Office* suite. These add-on modules allow one to easily extend *MS Word's* proofing facilities to new languages. They are simple to install, and fully integrated with all of *Word*'s normal proofing facilities; spelling and grammar are checked as a document is typed. Unknown words can be easily added to a customized dictionary. These are the same high quality proofing modules Microsoft includes with versions of Word that are sold outside the U.S.

Software has been developed also to support the Reading/Writing Workshop. This approach to teaching reading and writing has gained favor and fervor within the educational community in the last decade (Maddux, Johnson, Willis, 1997). Basically it is a way of teaching reading and language arts as an active, student-centered process. It gives students, individually and in groups, much of the responsibility for making decisions about what will be studied and why. It is also an approach that emphasizes the social and collaborative nature of learning. As with most methodological or pedagogical innovations, the reading/writing workshop has been redefined, realigned, and renamed on its journey toward widespread acceptance. Its early predecessor was perhaps the writing workshop in the 1970s. Reading workshops then developed to complement the writing workshops and the term "reading/writing workshop is now used mainly because writing is an important aspect of learning to read. Also, because these workshops encompass reading, writing, speaking, and listening, they are also referred to as literacy workshops (Chen, 1998).

Collaboration in the workshop entails sharing responses, ideas, drafts, and finished written products through conferences with the teacher, conferences and journal exchanges with peers and the teacher, and with members of the student's wider, non-classroom, and community such as parents. Collaborating to make meaning, rather than summarizing or reiterating teacher-held interpretations, is the function of small-group discussion and whole-class discussion. The teacher in these classrooms takes many roles including that of a learner. The teacher collaborates with students in constructing meaning through reading, writing, speaking, and listening.

The examples of reading/writing workshop activities below illustrate the possibilities of this approach. *Just Grandma and Me* from the Living Books series published by MECC, is an example of a electronic book for the reading workshop. Children's electronic books often have detailed color illustrations on each screen along with text. But they can also be quite different as well. For example, some electronic children's books give readers the option of having the story read to them in any of several different languages. Some also give students the option of clicking a word or phrase they cannot read and both hearing it as well as hearing a definition or explanation. The colorful drawings on each screen of children's electronic books may contain many "hot spots," objects that react when they are clicked with the mouse cursor (Maddux, Johnson, Willis, 1997).

Electronic children's books are one of the most popular types of software today. The best known of this genre is MECC's the Living Books series including: *Just Grandma and Me, Arthur's Teacher Trouble, The New Kid on the Block, Little Monster at School, Ruff's Bone, Arthur's Birthday*. Each page contains detailed illustrations and some text. But electronic books like *Grandma and Me* can also be used in interactive ways. For example, the child can select to have the story read in English, Spanish, or Japanese (see Figure 1), and the drawings on each page contain many "hot spots" that react whey they are clicked.

Figure 1: Just Grandma and Me allows users to choose from four different languages

*Story Weaver Deluxe* from MECC is an example of the electronic writing workshop program currently available in the market. It also allows users to switch languages between English and Spanish (see Figure 2). From a blank page, the student have a wide selection of background pictures, sounds clips to add on as sound effects or background music, clip arts, objects, text to speech, and many other features as their building blocks to create their own "books".

La tormenta se desató cuando comenzamos la carrera. ¡Gritá que debíamos correr hacia el refugio! Una vez dentro, comenzó nuestra aventura...

Figure 2: A screen shot of the writing workshop program *StoryBook Weaver Deluxe*

## Bilingual Games/Tutorial/Drill & Practice

Drills are software designed to allow the user to practice a skill that has already been acquired or taught (see Figure 3). A common type of drill and practice software involves practicing math skills such as multiplying two digit numbers. There are thousands of drill and practice programs that teach everything from math facts to sight vocabulary, parts of speech, names of the fifty states, and many other types of facts or basic skills.

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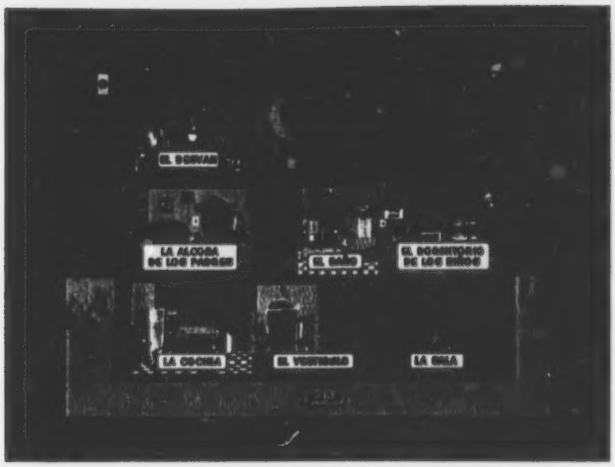

Figure 3: A screen shot of the drill and practice program *Multimedia Spanish*

Whereas drill and practice software is designed to provide a way to practice a skill that has already been learned, tutorial software is designed to teach the skill in the first place by direct instruction methods. While tutorial software may include elements of drill and practice and assessment, it is unique in that it presents new information and may be represented as providing an independent teaching environment. In its purest form, tutorial software is the embodiment of the teaching machine. The software takes the learner through a sequence of steps by first, present a new idea, concept, or task; present a query designed to assess the student's grasp of the new idea; provide feedback on the student's response; and finally branch the learner to a different sequence based on his or her performance. Computer games are a type of direct instruction program that can be adapted for use as a preparatory activity. Many types of interesting games are available. They generally involve a scenario such as saving a planet or discovering a treasure through knowledge and understanding some skill.

There are some collaborative efforts by scientists, educators, and professional video game and educational software developers who have come together to do research on and develop teaching materials that integrate games and computer-based explorations with learning (Chen, 1998). Their research activities focus on the human-computer interaction issues associated with learning in an electronic game environment. Specific topics include studying which game formats (fast-action, simulations, puzzles, etc.) can be used to carry math-science educational content, which formats are most attractive to students, and which formats are most conducive to learning. They are also investigating methods to integrate electronic games with more traditional classroom learning environments. The effect of collaborative play and how collaborative work can be incorporated into electronic games, and the role of mediation by teachers. Scholastic offers a great selection of software products (http://www.scholastic.com/kids/games.htm ) some of the products are: *Royal Makeovers, Meet the first winners!, Animorphs Hawk Rescue, Captain Underpants Name, Goosebumps Sandwich Builder, Goosebumps Hare-Brainers,* Scholastic's *The Magic School Bus,* and *Maze Craze.*

## Conclusion

In conclusion, the availability of software products in Spanish is very limited. Bilingual teachers, parents, and children have very a few opportunities to read stories, play games, or have tutorials in Spanish. However, the need to have access to these materials is critical in the USA. Research indicates that children who come to the USA with a strong literacy level in the first language will achieve also higher literacy level in the second language quicker. Therefore, bilingual children need to have access to materials that will support their academic success in first language so that they can also achieve successful in their educational career.

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# Reader Response in the Information Age

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Abstract: This paper reports an investigation into the use of web-based, interactive computer technologies in the achievement of curricular outcomes in reader response-based literature instruction. The primary purpose of the study was to explore the use of computers as tools for implementing classroom reader response instruction. Rosenblatt's (1978) *Transactional Theory of the Literary Work* and pedagogical approaches developed from this theory were used as the basis for developing and implementing computer-based literature exploration. The study used a network-based software application called Zebu as a venue for conducting reader response-based instructional initiatives. A portrait of fifth grade student's reading, writing and responding in computer environments is presented. The nature of students' responses is discussed and key characteristics of effective web-based reader response environments are outlined. Findings suggest that computer environments represent one venue where students can engage in collaborative conversations about literature.

## Introduction

The 1990s have seen computers and other digital technologies gradually pervading our schools and classrooms (Coley et al, 1997). Consequently, as we step into the new millennium, the use of technology has become an integral component of students' and teachers' lives. This focus upon technology raises important issues for teachers because they are being asked to find ways to effectively utilize computers in their day-to-day instructional programs.

Much of the educational thrust in the development of initiatives for using computers in classroom settings has focused upon integration of computer-based activities into existing curriculum (Alberta Education, 1997). The research discussed here embraces this integrative approach by exploring the integration of computer-assisted instruction within the boundaries of established pedagogical practice – namely reader response-based pedagogy.

## Research Background

This study emerged from the researcher's interest two areas: reader response theory and practice; and, computer-assisted instruction, in particular computer applications that allow students to interact with one another in a discussion forum setting.

Reader response instruction has its roots in Louise Rosenblatt's (1978) *Transactional Theory of the Literary Work*. According to Rosenblatt, the act of reading is a transactional relationship between the reader and the text. "An element of the environment (marks on the page) becomes a text by virtue of its particular relationship with the reader, who in turn is a reader by virtue of his [her] relationship to the text. And at the same time the term transaction, as I use it, implies that the reader brings to the text a network of past experiences in literature and life" (Rosenblatt, 1985, p. 35). Thus, the transaction involves the feelings and images conjured up by the words in the mind of the reader. Literature instruction based upon reader

response theories attempts to encourage and nurture student's articulation of the feelings and images that are evoked by the text – their aesthetic response.

Some reader response researchers (e.g. Leal, 1993; Eeds and Wells, 1989) have focused upon the role of literature discussion groups and how students collaborate in shared construction of meaning. Researchers contend that in such groups, students become involved in "a conscious weighing and discussing of one's own and others' responses" (Berg, 1987, p. 271) to text. Generative conversations like these are suggested to enhance and diversify student's personal responses to text.

Research that connects computers and literature instruction is limited, with small pockets existing in particular areas (e.g. Shen, 1995). Much research to date has been conducted with university students (e.g. Evans and Pritchard, 1995). This may be due in part to greater availability of networked computers in higher education institutions. By comparison, school-based settings have only recently acquired the resources necessary to implement computer-based networked literature study. Previous studies have focused upon connecting historical, authorial, semantic, and stylistic information to literary texts (Smith, 1996, Landow, 1989). Evans and Pritchard (1995) suggest, "no single extended work examines the implications that such [reader response] theories have for teachers and students who work in a computer-assisted classroom" (p. 4).

The two research areas discussed above relate directly to what happens in today's classrooms. Research in the area of reader response presents a vision of reading that sees the reader an active participant in negotiating their personal understanding about texts. Research relating to computer-based instruction uncovers the beginnings of investigation into use of computers in the implementation of reader response-based instruction.

## The Research Context

This research was conducted at an elementary school in Alberta, Canada. The school opened in early 1997 and currently serves kindergarten to Grade 6 students. During the initial designing of the school, incorporating computers into the infrastructure of the school was considered an important factor. Being a new school allowed for the construction of a learning environment incorporating the latest in educational technology, rather than cobbling new infrastructure around the established superstructure of an older school. The student population of the school was socio-economically diverse while being ethnically homogeneous. The vast majority of students attending the school were Caucasian and spoke English as their first language. The participants for this research came from one fifth grade class. During the course of the research 12 students participated in the computer-based instructional events. The balance of the class completed similar events in traditional pencil and paper format. Thus, students' participation in the research was condisered an integral component of the classroom instructional program. The students selected to participate were considered by the teacher to be representative of the cross-section of abilities in the classroom.

## Exploring the Possible Worlds of Computer Response

During the period of the research, the class was reading the novel *The Sign of the Beaver* (George Speare, 1983). Six instructional events were conducted that related to this novel. The global objective for these events was for students to develop literary understanding by "crafting it out of the raw material of their experiences, the text, and their discourse with other students, teachers, and writers" (Probst, 1990, p. 29). For this type of engagement to occur in the computer environment (and traditional environments for that matter) research suggests that teachers develop "tasks without single answers to encourage articulation, discussion and debate" (Oliver et al. 1997, p. 979). A computer application called Zebu was used as the venue for the students' participation in computer-based literature exploration.

### Zebu

In this research a computer application called Zebu was used to create and conduct the computer-based instructional events. Zebu was developed to enhance what the creators term "collaborative project-based learning" (Ward and Tiessen, 1997b, p. 22) in the computer environment. According to Ward and Tiessen (1997b), teachers can develop environments in Zebu where students engage in "social interactions aimed toward the development of understanding" (p. 22). Zebu is accessed via a web browser, either Netscape or Internet Explorer. "Technically the software is a set of CGI enhancements to a standard HTTP server, which allows users to construct and edit pages and other objects within a secure WWW site" (Ward and Tiessen, 1997a, p. 3). In Zebu, users can develop interactive web pages without the need to know HTML. The user is provided with a variety of page templates and editing tools to affect this process. A number of the features available in Zebu were particularly beneficial for this research:

- Information can be easily input, arranged and edited in the Zebu pages;
- Students' responses are easily tracked because responses are automatically labeled with the student's name; and,
- Discussion objects offer an interactive venue where students can read and respond one another's contributions.

### Discussion Objects

Discussion objects are simply on-line discussion forums where students submit written information that is then posted on the page for the rest of the group to read and respond to. Once students make their response, they submit it using a button directly below the response area. The response is then posted for the rest of those working in the project to read. As students became comfortable with how the discussion forum worked, students' back and forth responses became conversational in nature. This domain also allowed all students to comment at once rather than waiting their turn, as is often the case in effective face-to-face group conversations. Often a number of strings of discussion unfolded simultaneously. The students' engagement with and conversations about a variety of text in discussion objects became the focus of this research.

## Instructional Events

Instructional events in this project were designed to challenge students to revisit excerpts from the text and address open-ended questions and response starters. Revisiting allows students to develop a greater understanding of the text by re-engaging with the text. Hartman and Hartman (1993) recommend re-reading texts as a means of "expanding the role of the reader" (p. 202). The passages that were chosen to be re-read focused upon specific events or issues in the text that the teacher or students wish to explore more deeply. Then, questions and response starters were crafted to guide the students' exploration of the excerpts. Each instructional event was crafted to "encourage curiosity, activate prior experiences and feelings, [and] help students connect personally with characters, themes or issues" (Pritchard, 1993, p. 31).

Each instructional event was developed in such a way that students firstly made an initial response to a question or response starter that addressed the part of *The Sign of the Beaver* they were reading at that time. For example, in one instructional event, students were asked to explore the nature of the relationship that was developing between the two protagonists in the story. Students were asked to look at this relationship in light of which protagonist they thought was gaining or learning more from the relationship.

During each event, students engaged in two types of on-line response – initial responses and dialogic responses. Responses were contributed via discussion objects.

### Initial Responses

Initial responses refer to the students written contributions that were made in response to their reading of excerpts and response starters. The nature of the initial responses varied across instructional events. As

students became more comfortable with the Zebu environment their responses increased in length and depth.

**Dialogic Responses**

Once students had made their initial responses to the response starter they would submit their response and update the page so they could then see the initial responses of their peers. Students would then read and make comments about the responses of their peers. In the initial events, these responses were rather cursory and many focused primarily upon grammar and spelling errors rather than the ideas and opinions that students were articulating. However, in the later events, students' focus shifted to center upon content. This was in spite of some student's responses containing numerous spelling errors. It appeared that with appropriate guidance in expectations for response and increased familiarity and confidence in the discussion group environment students engaged in generative conversations about text. The responding process became recursive in nature there was semantic contingency across strings of responses as one built upon another in conversational fashion. When this occurred students became engaged in collaborative knowledge building as each student's contribution added to the shared pool of understanding.

## Selected Findings

This study indicates that networked computer environments like Zebu offer a setting where the boundaries of reading and writing blur. Reading and writing become coactive partners in the response process. In Zebu, the line between reading and writing merges in the response process along with the reader's thinking, which is woven across the response process. Thus, no one aspect can be viewed as a separate entity but rather each component (reading, writing and thinking) is coactive with the others. This coactive nature of the response process was demonstrated in Zebu as students moved seamlessly between reading, writing and thinking about texts and their personal experiences.

The impact of networked programs like Zebu is most noticeable when environments are created where a number of students can interact simultaneously. This allows students to access multiple perspectives by viewing and responding about the variety of responses contributed by their peers. Students in this research took an active role in constructing and negotiating literary understanding in the communal environment that Zebu offered. Students` literary engagement was characterized by their suspension of judgment in return for the opportunity to embark upon a generative journey of literary exploration. Students used the text and their peers as sounding boards for exploring ideas about the text.

Many similarities were recognized between the responses collected during this research and the nature of responses reported by previous researchers (e.g. Cox and Many 1992). The students' responses demonstrated that they:

- Use the text to support their assertions;
- Use one another's responses to support their assertions;
- Make connections with personal experiences;
- Empathize with characters in the text; and,
- Make tentative predictions about their understanding of the text.

The development and articulation of intertextual connections has been posited as an integral aspect of the aesthetic reading act (e.g. Beach, 1993). This study further demonstrated the importance of connection making in students' negotiation of literary understanding as students created responses that were interwoven with their autobiographical experiences. They played with the text, sometimes 'giving in' to what the text appeared to make obvious, then pulling away into statements of tentativeness as they balanced their experience of the text with their personal experiences of literature and life.

This study reaffirms the teacher's role in developing and delivering classroom reader-response pedagogy. In the computer, this role is particularly crucial because teachers must develop instructional events that

first, live out the goals of reader response and second, effectively utilize the tools computers have to offer to attain those goals.

During this study, students responded to a variety of questioning approaches. Observations made during this study provide further evidence as to the critical role that the nature and delivery of questions play in educational settings. Just as in the conventional instructional environment, articulation of aesthetic responses will only be realized if students' exploration of text is orchestrated in ways that encourage aesthetic engagement with text and provide avenues for effectively articulating response. In computer environments, reader response-based instructional events should be formulated in ways that constitute a "continuing reinforcement of habits of sensitive and responsible organization of literary experiences" (Rosenblatt, 1968, p. 344).

The use of computer technology in the classroom cannot be approached as a 'passing fancy.' In this study, as students became accustomed to engaging with text in Zebu, their "capacity for literary experiences of higher and higher quality and the capacity to reflect on these experiences with increasing insight and maturity" (Rosenblatt, 1968, p. 341) appeared to develop. To realize the computer's fullest potential, computers must be woven into the fabric of the daily classroom curriculum. Otherwise, teachers may not see the achievements students are capable of when they have the opportunity for ongoing experiences with the technology.

The development of computer-based initiatives in education should be a collaborative endeavor between educators and computer technologists. In the case of reader response-based initiatives, theories of how reading and writing unfold must form the basis for the development of reader-response-based computer initiatives. So, "instead of having technology shape the form and content of education, the educator has the responsibility of making education shape the form and content of technology" (Hazari, 1992, p. 145). Only when technology becomes advantageous should it be introduced into the reading and responding process. "Educators need to be particularly careful about choosing when virtual environments are more appropriate than actual physical experiences" (Winslow (1996p. 817). This cautionary note was heeded in this study by having students read *The Sign of the Beaver* in traditional format. This allowed students to enjoy the physical experience of reading - curling up on a couch, lying on the floor or huddled under a desk or table.

Some researchers (e.g. Clifford et al, 1997) have lauded computers as providing an equitable environment where all students can experience success. Observations made during this study indicate that this is not always the case. In fact, some aspects of the on-line environment can have a deleterious effect upon some students' engagement in this environment. For example, some students' ability to type and navigate within the environment impacted upon their opportunity to participate in the instructional events. Also, the ability to read excerpts and instructions also presented a barrier for some students. In addition, on-line discussion spaces have been posited as presenting a democratizing discussion environment where all students have the opportunity to contribute to classroom conversations (e.g. Cooper and Selfe, 1990). Online discussions in programs like Zebu do appear to allow all students to contribute to discussions about text. However, the freedom to have all students contribute simultaneously may result in numerous parallel discussions where no clear synthesis of understanding evolves from the conversation. Furthermore, this study demonstrated that although students do have the opportunity to contribute, that does not mean that others will hear their 'voice' in the group.

## Conclusions

In this project, the computer became a conduit for orchestrating conversations with and about text. Findings suggest that networked discussion forums present an environment where engagement with text using reader response approaches can be implemented. The study does not contend that programs like Zebu offer a panacea for implementing reader response pedagogy. Instead, the study indicates the possibilities that networked applications offer to augment instruction in this area. The collaborative venue created in Zebu opened up opportunities for students to read, write and respond about text in a shared context.

Overall, this study has proved to be a successful investigation of young readers' experience of reader response instruction in the comparatively new domain of the computer. As computer capabilities in schools continue to develop, there will be more opportunities to explore this growing area of educational research.

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# Towards a reading and text production practice with FL learners: a collaborative text construction with FL groups of French, English, and Spanish in the Web via the EquiText

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**Abstract:** An FL pedagogy, integrating reading and writing skills in foreign language teaching, associated with Web resources, may contribute to the development of those skills while producing collective texts. The EquiText, a collaborative writing tool, allows for innovations in text production either through teamwork or individually, mostly asynchronously. The readers/writers' participation in text construction may promote virtual interlocutions among the writers (FL learners), and their readers (the lecturer, the other fellow writers, researchers/observers). Another perspective of the current sole text reader, writer and evaluator is suggested. We propose to analyze the usefulness of the Equitext in significant written discourse as a result of the interactions in the tool. Three foreign language productions sustain our assumptions: texts produced by intermediate Brazilian college learners of French, English and Spanish as FLs, either individually, in paper, or in teams, using the EquiText, with significant results.

## Introduction

The purpose of this work is to find new manners to teach reading and writing in a Foreign Language (FL) that may contribute to the development of abilities needed to construct more significant and discursive texts. Support was found in the software of collaborative writing text - the EquiText - developed in the Post-Graduate Program of Computer Sciences in the Education of the Universidade Federal do Rio Grande do Sul (UFRGS). It is a useful tool to aid FL teachers and learners to go beyond the traditional school pedagogy that, historically, has been treating reading and writing activities as exclusive classroom practices.

Our proposal is to look at text production as a collective and public act. Therefore, the text is open to insertions, alterations, substitutions even deletions as well as further comments. This environment may consequently contribute for collaborative text practices as it provides a virtual bond among the participants – the writers (learners) and their readers (other learners and teachers) – thus diluting the teacher's sole role as reader and evaluator. The text is discussed and built collectively on the Internet.

Linguistic and conceptual exchanges, experienced by more than one participant or collaborator, reduces the legitimated role of the teacher as the only source of knowledge, and enlarges the dialogic dimension in the discursive production, either in reading or in writing. For that reason the theoretical foundation is based on authors such as Mikhail Bakhtin (1999ed.), whose *Marxism and Philosophy of Language* stresses the collaborative experience and this reflection on such experiment. In addition, Possenti (1993), Foucambert (1994), Coracini (1995), Paulo Freire (1996), and others, guide the theoretical perspective of this analysis.

The idea of using the EquiText emerges from the possibility of rethinking the traditional teaching of reading and writing skills. Three (3) FL languages teachings were experimented with the following method. Intermediate level learners of an FL produced Three (3) texts individually and three (3) other texts were produced by collaborative construction on the EquiText, in French, English, and Spanish.

Three texts with the same topic were produced both individually and on the EquiText, in each of the selected foreign languages. Thus, "Likes and dislikes" were produced by students participating in an English course, coordinated by Janete Sander Costa; "Ce que j'aime et ce que je n'aime pas" were elaborated by the students of a French course, under the coordination of Joice Armani Galli; finally, "Hablando de gustos" were produced by students of a Spanish course, under the coordination of Lara Oleques de Almeida.

We present a more general and qualitative view that considers the formation of the reader/writer in the construction of the meaning of the text. We recognize the limitations of this first experience, whose results already point toward a different collaborative production that should provide easier access to writing and reviewing, not only for collaborators but also for the evaluator.

## The reader/writer's formation in text construction

### Relationship interaction between reading and writing

Classroom reading and writing teachers traditionally display a paternalistic attitude. However, current tendencies favor less passive imitation and more autonomic thinking by students. Any reading, including FL, is seen as an active process where the reader participates in turning the text into a meaningful proposition. So, writing I part of the reading process, making the reading class a special class of elaboration of meaning.

Justifying the present work, starting from the experience with students of French, English, and Spanish as FLs, we pondered on the practice of teaching reading and writing in FL. As described in (Foucambert 1994) the growing procession of the excluded ones proclaims the end of the literacy era. However, this certainly does not eliminate reading and writing. But freed by other media from the task of preserving the oral word, reading and writing were never so present, abundant, necessary, and decisive. In cultural, political, informative, and scientific fields, both reading and writing are the privileged means of exchanging, sharing, reflecting; of readiness, studying and option. In this sense, Foucambert, op cit, claims that if fifty years ago the percentage of the literates was a good indicator of industrial development, the readers' percentage reveals today, in the developed world, the real degree of democracy.

Under such perspective the text is conceived as an entrance to the reading act, a space of confluence and of divergence of ideas that are covered not simply by a certain linguistic code, but by a conception different from what originated in the mother tongue, or L1. Paraphrasing Foucambert, to read means to be questioned by the world and by self; it means that some answers can be found written; it means to have access to that writing and to create an answer that integrates with the existing text. To read is to interrogate the writing; therefore promoting an extra-curricular activity that allows solidifying the narrow relationship between reading and reading production, i.e., the writing, is meaningful.

Reading construction is an indispensable theoretical notion because it allows surpassing the challenges of most learners in an intermediate level in LF. At this point, the student seems to be "gagged" by the FL impediment. We can then compare reading construction and the moment of FL skill. Foucambert argues that literacy is over; it was necessary but the student is invited now to converse critically in an FL class. He no longer

compares the literate with the illiterate, but rather the reader with the non-reader. Reading is not the acquisition of a mechanism, inasmuch as we would not dare teach the mechanism of speech.

From the first, or ascending, reading model we identify a non-concern with the readers' formation, since its practice denounces merely decoding the text. Also known as *bottom-up*, this reading searches for graphics that correspond to phonic units that the teacher had requested , a mere reproduction of the written material.

As announced previously, we conceived the space of the FL classroom as a special place of meaning elaboration, mentioned in Coracini (1995). " So the text (...) loses its essential function of provoking meaning effects in the reader/student, to be just the place of recognition of units and linguistic structures whose functionality seems to do without the subjects".

On the other hand, the second reading model, descending or *top-down* model invites the reader to participate in the process of construction of meaning, allowing the learner to anticipate the meaning that they are predisposed to find. Thus, they formulate hypotheses on the written forms that will appear and they will go in search of a minimum of indexes to verify them. This alters the focus of reading since it goes from the reader to the text, and perhaps it is for that same reason that it is criticized, because it equally departs from an unilateral approach, minimizing the intense exchange tenor which is possible by the precedent model.

The interactive reading model, the third one, presupposes that to learn to read is not to receive an existent knowledge, but to transform the unknown situation into knowledge acquisition. A great turning point of that school is the encounter between text and reader, reading being a two-way process that joins linguistic competence to previous knowledge. Next step up is then the interactive reading in which a number of people cooperate to discover the meaning of the written text.

Foucambert argues that reading is a social learning similar to learning of oral communication. Furthermore, "The relationship that the individual establishes with the environment, the perception that he has of it, the action that unfolds in it, the affective tint projected on it, the knowledge exercised in it, the personalities acquired in it, all this is unavoidably social and not at all natural".

Thus, we would offer a reading and writing project to a group of intermediate level students and find that they interact in cooperative writing. We would see that not only in the group, but mainly in each participant's individual production, as in Foucambert's words: "knowledge is not in what one receives, but in what one constructs collectively". It clearly sustains the pertinence of works that rethink the reading and writing.

Through the EquiText it was possible to rehearse that process by means of a tool capable of registering in its historic function the many a time one writes a piece of thinking. In this direction we believe that the reader is compromised with his/her being in the world and his/her transformation as well as the other(s).

This work has been guided considering that the entrance in the reading experience to be fundamental, since it was from the reading that the writing acquired its statute of a means of detachment. We believe that one only writes starting from what one thinks one understands in the reading while an active process of integration with the writing and vice-versa. Under this viewpoint we started to search for a more critical FL learner's education. In this sense, the reading and writing pedagogies are linked: by the nature of the communication situation and not just for the used code. To write is precisely to work on the written language to discover what one has to say.

> "Writing is a thinking and communication tool that (...) allows to build a theoretical model starting from the real and expresses the coherence of this model inventing the relationships among the elements. (...) the writing resource, via the text production or via the reading, is an essential and specific moment of any elaboration of a point of view on the world, a means of detachment and of theorization, that allows to pass from the conjunctural, generated by the oral, to the structural, expressed by the text. Every individual that intends to take the power on the world should throw hand in that way of thinking and, therefore, to find the writing."

Those Foucambert's words sustain the experience accomplished by the three FL groups of students. Writing is not the use of a tool to express something preexisting; and this question seems to duplicate when we speak about FL, since the work on a raw material, and the confrontation with the language comes in the first place. It should be clearer though that as well as in the L1, reading and writing in the FL should prioritize meaning, not form, once language is not separated from thought nor from the production of meaning. The construction of the essential relationship between reading and writing resides in the perception that meaning depends on the conditions of production of the text, articulating reading and writing in the FL. Like this, the registration of the writing or of the reading is not the cause for the textual production, but the consequence of a balanced articulation between both. The critical reader/writer is well aware of that, because he understands, or better, s/he is in a constant search for the understanding of the meaning of his/her text. It is not reducing the importance of the linguistic fact, but suggesting its discussion in a production arena, characterized by its being historical and social.

Under such perspective, we summarize the impossibility of assuming the power of the language without understanding the social relationships that grants its power. It is in that sense that the conception of language in Possenti (1993) rebounds in a widest space than of the reading and writing abilities: Possenti suggests an entire social universe, individual and linguistic, that is put upon during the accomplishment of acts that demand a critical posture towards decision making. Inserted in that net of reflections, we establish a relationship between the formation of the reader/writer and the handling of a new way of dealing with thinking. To become a reader, it means to have access to the social writings. In other words, it means to be capable of dealing with collective tools.

And, as an echo to Foucambert's quotations, the proposal of our work with these three FLs brings new dynamics to the reader/writer's formation in the new communication circumstances, as described in the next part.

**Integrating or interacting reading and writing through a collective tool**

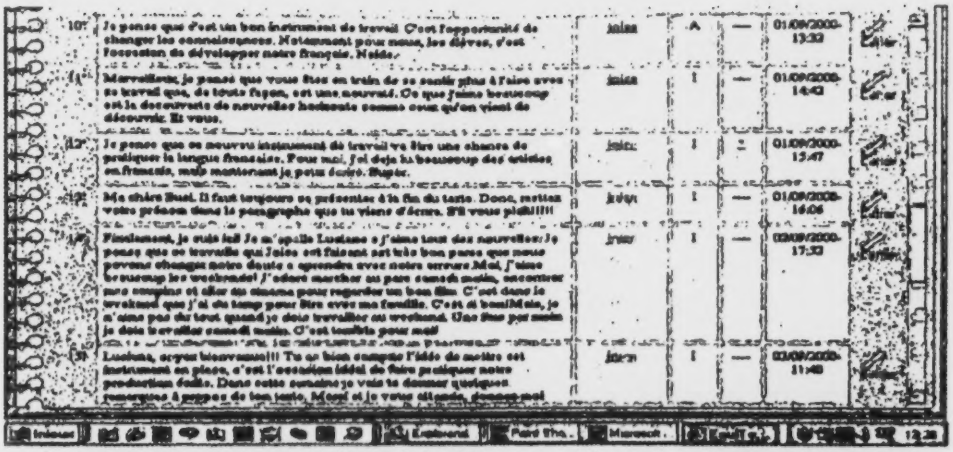
We should recognize at first on how this new writing procedure - with a connecting view in the reading and vice-versa - when interfering in a relatively recent arena, it causes strangeness, since other forms of organization of knowledge in a traditional classroom other than the textbook being still ignored. Then we consider pertinent to trace a short report regarding the experiment integrating reading and writing in a virtual environment which demands a new interaction mode.

The proposal initially launched to the groups, required that a text should be written about the learners' or the participants' likes and dislikes. The titles "Likes and dislikes", "Ce que j'aime et ce que je n'aime pas" and "Hablando de gustos" announced objectively what had to be developed. And from the very beginning, improvements promoted by the use of the EquiText - a collaborative writing tool in the Web - were evidenced.

During the elaboration of those individual texts, more than one of the participants looked for the mediator/FL teacher to explain how to write what h/she had in mind. The main orientation was to make it possible to promote as much autonomy for the search of the "good expression" structures in the FLs, emphasizing the fluency in detriment of the correction. In addition, we proposed to observe marks of rewritings, after the withdrawal of that material, like registrations accomplished possibly due to the (re) readings of their textual productions while interacting on the Equitext.

After having finished the individual works, compositions on the same topic "Likes and dislikes" in the three FLs, which took place in less than two weeks. The EquiText was then presented as a tool for the collective text production in the Web, a totally strange experience altogether. It was requested that each one of the students began his/her collaboration, elaborating and inserting their ideas in the paragraph format tool lay out, starting then a team text construction. It has been noticed that the sentences employed before, in the individual texts, were modified in the spaces offered by the EquiText, not only getting adapted to a new context, but also creating a new context. As Possenti points out, "The effect of meaning is not the same, because the game of images of the speaker gets explicit: it is a constant adjustment."

The first contact with the collaborative writing in the Web, being introduced initially as a participative writing, is worthy of comment, once relevant observations are made for reflection. Reflecting over the connected writing and reading processes evidenced by that first experiment with FLs students. "To produce a discourse is to continue acting with that language not only in relation to a speaker, but also in the language itself." (Possenti, 1993, p. 57). Language is not just seen as a tool to organize thought, nor as a means of communication. It is recognized as a form of action, a process of establishing relationships, of creating closeness among interlocutors. (See Guedes, 1999, 2000).



Unnecessary to register the resistance in handling a new writing environment, once it exposes the way of thinking added to the reading and writing style of the peer contributions in their FLs. The interacting itself in this new arena turns it even more visible to the fact that the text is in fact the individual's institutionalizer. The resistance can be identified in the 'historic' function, one of the resources of the EquiText, an important source of data collection; it allows nodal points to be identified in the production of each participant's paragraph. This historic function also shows evidences in the attempt of correcting each other's contributions or, otherwise, the mutual support as if they were in the old classroom context. An interesting point is that those moves cannot take place in the mother tongue (L1), forcing them to dive unavoidably in the form of thinking of that other LF.

In other words, during the writing process through the Web, the attitude of having to write "Comment on dit ça?" or "Correct my mistakes, please", registered in the 'Comments" function, next to a paragraph, for instance, are moves which take place clearly, visibly, and directly during the textual production, contrarily to the individual model. There, in the final text, or in its final product, it is presented without any possibility of recurrence to the difficult points expressed in that form of construction of meaning. "The interlocutors are neither slaves nor masters of their language. They are workers". (Possenti, p. 58).

As the experience ended, though it could have been extended for a longer period of time, it was requested that each participant presented his/her conclusions on the proposed tasks, comparing the individual and the collaborative productions, in order to compare some results in the use of the EquiText, once through him one had experienced a group of work with and on the language, in a space in which all the mechanisms worked in favor of a significance.

We recognized that at this time the participants felt more confident, an unfolding characteristic of exposing ideas different to the traditional, where it is possible to try the power of facing the world as a thinking being, active and, therefore, qualified to read and write as a free, autonomous citizen.

We equally identified that the status of each one of the students grew progressively in every moment of the negotiation of meaning. The explicit negotiations among them and their management as if in an intense game made possible through their exchanges towards the construction of their readings and writings. The two-way road imposed by the task proposal, resulted from the tension between the individual and the collective, in a demand of its sedimentation and a change or adaptation attempt as in Possenti's view of the double face of language. Also, the teaching/learning interrelation as the production of knowledge originated from the dialogical teacher/student relation, to "bring the other one closer to the movement to his/her thought".(Freire, 1996, p. 132).

We noticed that this type of activity employs an author/reader status to the learner from the beginning, matching Foucambert's assertion that "The way of learning is what gives power, much more than what one learns. (p. 36). This is illustrated in paragraphs 10, 11, and 12, highlighting the peers' contributions. (Fig. 1)

## Final considerations for the beginning of a debate about similar experiences

It could be verified that, through the action of transforming the writings and the readings, it was being built the understanding, the knowledge, the 'savoir faire', at last, of the three FLs. The same space referred by each of the participants were being shaped as their writing and reading apprehensions were unfolding as well as



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the dissolving dicotomies in the teacher and student roles, reading and writing, teaching and learning, individual and collective.

According to Foucambert, the pedagogical rule, adapted here to FL teaching is the research-action, because we can only understand what we can transform; "an understanding that is built by the own transformation action and by the analysis of the processes and results of that transformation. (p.63). Because still the "access to the reading" of new social layers implies that reading and text production become tools of thought of a renewed social experience, since this presupposes the search of new points of view about a wider reality, that the writing, according to the author, helps to conceive and to change, through the simultaneous and reciprocal invention of new relationships, written and new readers.

We thought that the link with the reading, privileged in this space, deserves our work to conclude by now. The discussion on what one understands for reading in FL is, in fact, a fight for democracy, since it seeks the collective domain of the means of production of meaning. We will not just propose to increase the number of readers already existent, but to reflect on reading as a social change, a thought that rebounds unavoidably in the practices of teaching and learning of reading and writing in a FL. Writing and reading cannot lose their dynamic character, on the contrary, to look for alternatives that make possible the interactive/integrated writing of thinking and critical students in their FLs classes or groups.

In that way, reading classes and of textual production they should be the space to leave besides the information to the student, making possible them a more appropriate formation to your glance for the world, dinamizando the entrecruzamento of glances belongs to the writers, then, authors, belong to the readers, belong to the teacher inserted in this new reflection space and of action. According to the words of Coracini, the teacher should be a facilitator and not a simplificador of the compound process that is to teach one READS, propitiating spaces, be them virtual or real so that the student can be established how to be thinking - that is - in the construction of the sense. Like this, through EquiText, we saw him/it as the production conditions went decisive for the critical construction of the sense that each autor/escritor supplied your readers.

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# The self learning system to support the teacher of Japanese language education

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In the countries except Japan, according to Japanese government investigation in 2000, learner of Japanese language are about 2,090,000 people. However, most of these learner are beginner grade. Middle grade learner are an extremely little.

In a beginner grade, they learn the character of kind of "Hiragana" of a phonogram. It is easy to understand this Hiragana which is the simple character. Other way, middle grade learner must learn the character of kind of "Kanji". "Kanji" is the ideograph character. And it is a hieroglyph of one kind of Chinese.

In Japan, the communication that we used only Hiragana for is difficult. In a field of Japanese business, people must use 2,000 kinds of Kanji characters. It is a big burden for the learner to memorize many complicated Kanji. In addition, Japanese language teacher oneself do not understand all Kanji characters, too.

So we developed the Kanji learning systems which worked with the PC. We were able to do "Memorizing by Writing" not to use handwriting input device in this learning system. This learning system is a system for self-study, we think that we let Japanese language teacher reduce the burden of education.

## Introduction

At present, in 114 countries of the world, Japanese language is learned. In the countries except Japan, according to Japanese government investigation of this year, learner of Japanese language are about 2,090,000 people. As for the number of learner of Japanese language, 30% increase than the number of the learner of 1993.

However, most of these learner are beginner grade. Middle grade learner are an extremely little. In a beginner grade, they learn the character of kind of "Hiragana" of a phonogram. It is easy to understand this Hiragana which is the simple character.

However, middle grade learner must learn the character of kind of "Kanji".
"Kanji" is the ideograph character. And it is a hieroglyphist of one kind of Chinese. In Japan, the communication that we used only Hiragana for is difficult. In a field of Japanese business, people must use 2,000 kinds of Kanji characters.

It is a big burden for the learner to memorize many complicated Kanji.
This big burden is the reason with a little middle grade learner. In addition, Japanese language teacher oneself do not understand all Kanji characters, too.

The system that the learner can learn Kanji by the high efficiency by oneself is necessary in order to increase the Japanese learner of middle grade. The system is to let you reduce a big burden of a Japanese language teacher.

## Progress of Research

We have researched the efficiency method how we could take good care of learning of Kanji. First of this research, we have connected the handwriting input device to Macintosh first. And we set program to recognize a handwriting character and developed the system can execute "Memorizing by Handwriting".

In the next study stage, we shifted platform to the PDA to have a handwritten character recognition function from Macintosh. By this stage of research, we could develop the portable learning system.

We have used 4 kinds of platforms from Macintosh to PDA. It is to use a recognition function of handwriting character that these are common to in 4 kinds of development. However, PDA did not spread in the Japanese language school, Furthermore, there is not the possibility that PDA will spread in future either. We judged that it was not suitable to use PDA as a platform of the learning system in future.

So we considered learning environment in various countries and developed the learning systems which worked with the PC such as Windows or Macintosh. By developing this learning system, we gave up the connection of the handwriting input device and PC. Because, handwritten character recognition program in input device generate do freeze of the learning system frequently. Perhaps we think that the conflict between programs occurred in main memory.

So we were able to do "Memorizing by Writing" not to use this device in this learning system.

We developed this system by type of WBT(Web based Training System). Because, this system can work by any kinds of computer. And the operation of this learning system is possible with Internet.

## Outline of the Learning System

There are 3 kinds of learning problems set by the learning system. They are "how to read of Kanji", "how to write of Kanji" and "listening". The learner chooses an answer to these problems(Reading, Writing) on the screen with the mouse.

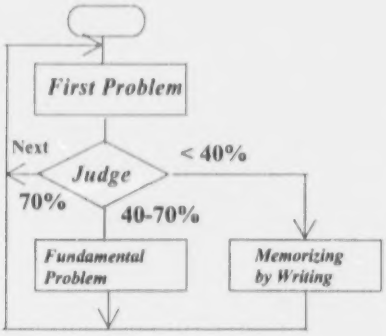


**Figure 1: Flow Chart of Learning System**

Evaluation of result that the learner replied is totalized automatically. And, according to evaluation of answer of a learner, the next problem is displayed automatically.

When evaluation to the learner is equal to or more than 70%, the learning system displays a page of "problem of next unit."

When evaluation to the learner is range of 70% from 40%, learning system displays a page of "fundamental problem" that a degree of difficulty is low.

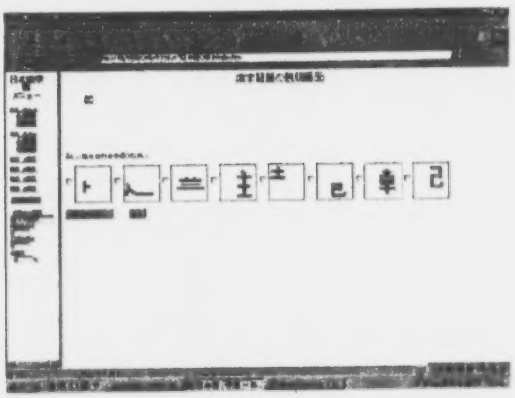

**Figure 2: Memorizing by Writing**

And learning system displays a page of "Memorizing by Writing" if evaluation is less than 40%. In this page, multiple pieces are constituting one Kanji character is displayed. Furthermore, few wrong pieces mixes wittingly, too. We let the learner select right pieces in this page. By this learning method, the learner can learn the Kanji character that he seem to write.

In the page of "listening", conversations and questions of Japanese taped beforehand are played back. And the learner chooses an answer for the question that played back conversation. The learner chooses it among answer group in page.

## Conclusion

We developed this learning system by "Front Page of Microsoft".
By using this software, the Japanese teacher who did not know a lot about computer can maintenance of learning data comparatively easily. The learner can learn difficult Kanji by the situation that resembled handwriting learning. And, the learning system which we developed this time is a system for self-study, we think that we let Japanese language teacher reduce the burden of education. We hope that the Japanese language teacher use this learning system as the system to supplement their class.

This learning system can be used with either Internet or CD-R. As a plan of the duration, we distribute CD-R of the learning system to the university and the Japanese school of Asia / Pacific region where there are the middle grade learner. And we get evaluation of the learning system to us from Japanese language teacher and learner.
We will make use of those evaluation in improvement of the learning system.

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# Literacy Junction: Exploring Narrative Theory and Books for Youth in a Cyberworld

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**Abstract:** This paper describes the development of *Literacy Junction*, which is an interactive web site for teachers and students in grades 5-8. Using an interdisciplinary approach to learning, *Literacy Junction* offers two distinct features: technology-enhanced experiences with outstanding young adult literature and cybercharacters who serve as both academic models and technology guides. A pilot study was conducted in which 8 students created their own cybercharacters after interacting with the site's cybercharacters as well as text-based literary characters. Through qualitative analysis of students' character drawings and oral and written discourse, several themes emerged depicting the role of cybercharacters in conjunction with students' aesthetic responses to narrative texts. Based on these preliminary findings we anticipate that future studies will contribute to narrative transactional theory as it is recontextualized from print-based to web-based learning environments.

## Introduction

*Literacy Junction* (www.ncsu.edu/literacyjunction) recently funded by BellSouth and the Kenan Institute, is an interactive web site for teachers and students in grades 5-8. Based on a ten-month iterative design process with input from a teacher advisory board, *Literacy Junction's* purpose is to encourage teachers to accelerate the integration of new and emerging technologies into literacy instruction. By offering the opportunity for both face-to-face and virtual meetings, this networked professional community provides the mentoring and continued support that teachers need to initiate and sustain new teaching practices. Over time, we expect *Literacy Junction* to help teachers' integrate technology, to increase students' capacities to use technology as a learning tool, and to enhance student achievement.

## What Are the Theoretical Underpinnings of *Literacy Junction*?

Using an interdisciplinary approach to learning, *Literacy Junction* offers two unique features. First, the site includes technology-enhanced experiences with outstanding children's and young adult literature. For example, as students read Christopher Paul Curtis's, *Bud Not Buddy*, they select from a variety of activities to explore the thematic layers of the book. They might then create a WebQuest, audio-documentary, or participate in a Socratic seminar. Tutorials created specifically for the site provide support for both teachers and students new to these technologies and strategies. A second feature of the site is the Cyber Heights Middle School. This fictional middle school offers an online community of cybercharacters who serve as both academic models and technology guides as teachers and students interact with the offerings on *Literacy Junction*. Cyberteacher Jan Rosenberg models online teaching strategies while students Anjoli, Garret, JC and Claire model participation in the reading-related activities on the site (see Fig. 1). All of the characters reflect real world personalities so students who visit the site can identify with both the character's strengths and weaknesses. Students are also given the opportunity to examine and critique the academic work of the cybercharacters.

**Figure 1: Cybercharacters in *Literacy Junction***

The creators of *Literacy Junction* endorse the time-honored pedagogy underlying Louise Rosenblatt's (1978) transactional theory as a platform for student engagement with narrative text. This theory suggests that within any reading experience, a reader's stance may fluctuate along a continuum between aesthetic and efferent. Readers taking an aesthetic stance bring their own personal meaning to the text, in effect "living through" the textual event. Rosenblatt argues that, to optimally experience narrative texts, students should take an aesthetic stance when reading. By extending Rosenblatt's theory to *Literacy Junction's* cyberworld, students are invited to engage aesthetically not only with the featured novels in a *primary transaction* but also with the site's cybercharacters and their cyberworld in a *secondary transaction.*

## Pilot Study

Considerable research has been conducted on primary transactions with text (see Marshall, 2000) articulating spontaneous and idiosyncratic associations with personal experiences of the reader. However, extending transactional theory into cyberspace has yet to be fully explored (see Turkle, 1995; Tapscott, 1998 for a related discussion on parallel identities in virtual spaces). Our qualitative pilot study investigated the consequences for this type of secondary transaction, specifically examining the nature of students' relationships with the cybercharacters in the *Literacy Junction* environment. Guiding research questions included the following: How do students react to cyberpeers? How do they position these peers within the virtual/actual continuum? How do they identify with the personality traits of their cyberpeers? How are students' primary transactions with literature affected by their secondary transaction with cyberpeers reacting to the same literature? The participants consisted of eight 6$^{th}$ grade students (i.e., 2 African Americans and 6 Caucasians; 4 males and 4 females). Over a period of six weeks, the participants met with a researcher for six one-hour sessions as they read a sample novel and interacted with the primary characters from the novel, engaged with the site's cybercharacters through a series of oral and written activities, and finally created their own cybercharacters related to the novel.

## Preliminary Findings and Future Research Directions

Through qualitative analysis of students' character drawings and oral and written discourse, the following themes emerged. First, the highest level of student engagement, interest, and motivation occurred when students were given the opportunity to create their own cybercharacters. Of particular interest to the students was the worldwide publishing capacity afforded by the Web. They wanted their actual peers to become familiar with the virtual characters they had generated. Second, students projected their personal idiosyncrasies and attributes onto the characters they created, signaling their capacity to objectify significant issues and experiences they face as adolescents. Third, the process of comparing and contrasting the cybercharacters' engagement with the actual characters from the novel (i.e., secondary transaction) appeared to entice students to revisit their initial aesthetic transaction with the text. Based on these preliminary findings, we anticipate that future studies using the unique features of *Literacy Junction* will amplify narrative transactional theory as it is recontextualized from print-based to web-based learning environments.

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# The Creation of a Nexus between Telelearning and Teleteaching

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**Abstract:** There is a group dynamic that occurs in a synchronous "face-to-face" university classroom environment (Johnson & Johnson, 1975). At times, this dynamic is an appropriate and authentic method of teaching. However, the prosaic nature of how we have viewed this sort of academic interaction up to the present time has both literally and virtually opened the door to the creation and implementation of dynamic computer-mediated web-based courses. This paper discusses the "links" between telelearning and teleteaching, and also recounts the "rites of passage", both intentional and unintentional, in the creation and implementation of seven university level Web-based courses.

## Genesis

Many have questioned the validity of a university experience that has students learning via a direct lecture-based form of communication from a professor, AKA "the sage on the stage" (Hullfish & Smith, 1961; Moffett, 1968; Rogers, 1969; Hirst &Peters, 1970; Becker & Gersten, 1982; Weingand, D.E., 1984; Joyce and Calhoun, 1998). Personally, I have learned a great deal in just this sort of format, and have even utilized this pedagogy for part of my university teaching career. However, I have begun to question and rethink this form of instructional design and professional development, somewhat along the lines of thought presented by Roberts and Ferris (1994) and Boddy (1997), all of who dealt with the issues of time and knowledge acquisition/delivery.

During the 1980s, the Faculty of Education at Memorial University of Newfoundland (MUN) (http://www.mun.ca/educ/) became a leader in the utilization of distance education utilizing a province-wide teleconference system. I had the opportunity to develop three undergraduate courses for this teleconference system, which were offered collectively a total of twenty-one times during the period from 1981-1991. The synchronous nature of teleconferencing required that the students registered for one of these three courses be at one of the 38 teleconference sites located throughout the province of Newfoundland and Labrador. However, in a Canadian province three times the size of the state of California, this form of distance education was considered vital in enabling pre-service and in-service teachers opportunities to take university courses as a means of fulfilling degree requirements, or for professional development. The "seeds" of my understanding on the development and implementation of distance education courses was "sown" during this ten-year period. Yet it would not be until 1996 that these "seeds" would germinate into the early design for a computer-mediated web-based university course.

## Serendipity

With encouragement from the Dean of the Faculty of Education, MUN, I undertook the task of creating my own web page (http://www.ucs.mun.ca/~glassman). I saw this form of communication as a means of providing my students with some insight into who I was as a professor and a person. Also, if the truth were known, I did not want to be considered an "Information Technology Luddite". This web site initially became the conduit for my course outlines.

One day, a student who was scheduled for surgery, asked me if I could put certain of my class notes and lectures onto my personal web site. It was at this point that I realized the potential for web-

supported course material. I created a dedicated web site for each of the undergraduate and graduate course I taught, with hyperlinked course outlines, class notes/lectures, diagrams/charts, writing guidelines for their assignments, along with other web sites of relevance to the course. Based on the immediate positive responses from my students, I discovered pedagogy appropriate to both the current technology and my personal style of teaching.

## Exodus

I once saw a bumper sticker that read "Students need to help their teachers find the on ramp to the information highway." My students helped me "see" and understand the potential for web-supported course material, and now I was ready to "journey into cyberspace" with the creation of a self-contained, non-linear telelearning/teleteaching environment.

With the approval from the Dean of the Faculty of Education, MUN, and technical support from MUN's School of Continuing Studies (http://www.ce.mun.ca/), I began the creation of a "mediacentric" classroom environment, which utilized the potential of multimedia and computer technology to "deliver my message".

## Teleteaching

Specific pedagogical concerns were the focal points in the creation of my two initial web-based courses "Current Approaches to the Teaching of Reading in the Primary and Elementary Grades", Ed.3510 and Ed3520.. The "transmissional" model of instruction, where content is the primary focus of all concerned, was a teaching strategy I was utilizing less and less in my on-campus courses. My web-supported courses had lecture notes uploaded onto our Faculty's server, where students could download these notes either prior to or after in-class discussions on their content. The "transactional" model of instruction, where interaction is the focus of the presentation of selective content, was a process that I was effectively utilizing in my on-campus teaching (Routman, 1991; Graves, Watts-Taffe & Graves, 1999). However, I saw the inherent need in the creation of these initial web-based courses to implement a "transformational" model of instruction, with its focus on a holistic, interdisciplinary curriculum and a social identity structure based on each student's own learning style. I did not want to create a telelearning environment that had a format founded on a sense of "Social Darwinism", where only the technologically "fittest" students survived. I wanted to develop a course where active involvement in the synthetic process of knowledge construction and the analytic process of understanding could be experienced by all, with each person enabled to achieve their personal potential (Lefrancois, 1991).

This teleteaching experience needed to become a guided discovery into learner-centered instruction. To accomplish this task of creating a self-contained, non-linear telelearning environment, I was forced to consider the paradox of "time/space binding". The asynchronous nature of this course required a format that enabled active on-line involvement from persons far removed from where I was located. Support services to assist any one learner had to be built into this system. These support services took the following forms:

- Detailed prerequisites were provided prior to any student registering for the course, as a "fail safe" measure to inform students of the technological necessities of the course (e.g., access to e-mail messages, an ISP account, a VCR, etc).
- Specific instructions were provided on-line as to how to access, register for and successfully log on to the Alta Vista Forum component of this course.
- Specific "finder-friendly" hyperlinked navigational icons were provided to assist each learner in their "journey" throughout the various components of this web-based course (e.g., a glossary was created for the various terms that were utilized throughout the on-line manual, with "hot spots" embedded within the on-line text to ease the navigation from the text, to the glossary and then back to the text).
- Direct e-mail contacts on a daily basis were established during the first week of this course, so as to ensure that any problems could be overcome immediately. Frustration on the part of students is the death of any distance educational format.

At the core of this teleteaching experience was the necessity to create instructional content that had relational value when compared to traditional on-campus course. The traditional correspondence-genre of readings and worksheets/assignments is, in my opinion, not the best way to design web-based course material. The telelearner needs to feel a real sense of involvement and accomplishment from the onset to the conclusion of this experience. Such learners need to consider this form of learning "worth the effort". Thus, there had to be a relevant use of the on-line text materials, with on-going interactions between professor and student, and then among all students registered for the web-course.

## Telelearning

I make a distinction between teleteaching and telelearning. Teleteaching requires the instructor to design experiences that will enhance a learner's knowledge and understanding via an analytical and critical engagement with various mediums. This cannot take the form of impositional teaching, which is the direct teaching of some form of knowledge without regard for the learner. The effective teleteacher needs to "think like a telelearner", envisioning as many potential sources of problems and frustrations as possible. As well, the teleteacher needs to consider what I call the "addendum factor". Classic lines from the Broadway play "Oliver" best sums up this addendum factor -- "Please, sir. I want some more." An efficient telelearning environment will contain components of what an instructor considers to be needed by a learner, along with components of what learners perceive as being relevant.

The telelearning experience, if designed well, provides for self-paced independent learning with remote feedback and assistance. However, telelearners need to fully understand their role in this new teaching/learning experience. Telelearners must assume some responsibility for their own learning. A sense of autonomous individuality and a unique form of self-affirmation need to be present in each learner. Such learners must work well alone, due to the flexible asynchronous schedule of this experience. The intrinsic motivation of these learners must be strong enough to overcome the sense of virtual abandonment. The teleteacher can provide "scaffolding", with clear-cut directions and electronic feedback (i.e., e-mail guidance), but the emphasis is on learner-centered experience.

## Convergence

During the winter semester of 1997, Ed. 3510/3520 "Current Approaches to the Teaching of Reading in the Primary/Elementary Grades", the first totally web-based undergraduate course for the Faculty of Education, MUN, went on-line, with an initial enrollment of 29. This brought together (i.e., convergence) the various relevant elements of a traditional teaching/learning experience within a technology-based distance-learning environment.

The course combined an on-line textbook, which I authored, as well as a supplementary traditional textbook (Blount, 1994), along with a two-hour videotape, e-mail and an interactive discussion component utilizing the Alta Vista Forum.

The on-line textbook that I had written specifically for this distance education format provided the specific theoretical information and practical instructional techniques that I would share with these students if they were taking this as an on-campus course. This information was collated around the four "current approaches" of reading/writing instruction (e.g., the Literature-Based Curriculum, the Writing/Reading Connection, the Integrated Thematic Curriculum and Computer-Managed Instruction) that comprised the focal points for the course. This was to be a non-linear intertextual experience for the telelearners since they were required to relate this on-line material to teaching/learning in the "real world classroom".

The Alta Vista Forum (AVF) was the medium I utilized to assist me in my role as an instructional facilitator. I attempted to maximize student interactions with an asynchronous reflective format. I posed specific questions on the AVF that were to be answered by the telelearners. These questions were specific, but open-ended, to help create a "risk-taking" on-line environment where students felt that they were able to express their thought freely. Initially, I utilized a Socratic questioning technique, providing positive feedback with each of their responses and then posing additional questions for their reflection. In each of

these individual responses I made reference to the comments of other students, encouraging inter-student commentary and replies. Eventually, this interaction came about naturally, with students freely commenting on the replies made by each member of this virtual "cyber family". Students posed their own questions and this, in turn, added greatly to this interactive reflection. I provided a specific site on the AVF for exchanges of a non-academic nature. This site, the Café Chez Marc, was a "meeting place" where the participating students exchanged views on such diverse topics as the state of the Newfoundland economy, the trends in fashions found in today's schools, the weather, the Stanley Cup, et al.

I posted "E-mail Office Hours" when students could e-mail me a question and expect a fairly instantaneous reply. However, I found that students were e-mailing me their questions at almost every hour of the day. I attempted to access my e-mail from home each night at 8PM and midnight for those who posted their messages late at night, or for those who read my replies very early in the morning.

The videotape contained a visual collection of what I considered to be ten effective educational CD-ROMs. The videotape was professionally produced by the Center for Academic and Media Services (http://www.cc.mun.ca/cams/video.html) here at MUN. As I utilized each educational CD, the images and sounds on the screen of the computer monitor was fed directly into a video camera, along with a "voice-over" to describe what I considered to be the strengths and weaknesses of each CD, from an educational frame-of-reference.'

Assignments, such as the WWW Learning Logs, the Interdisciplinary Literature-based Unit, a Reflective Final and the qualitative participation on the Alta Vista Forum, were submitted in a variety of ways. Other than the AVF interactions, the other three assignments could be submitted in hard-copy form via mail or hand delivered to my office, or on-line in the form of an attachment to a note sent via e-mail. Students submitted sample drafts of their writing on-line, and I commented, via e-mail attachments, on these on-line drafts the same day they were received. Thus, just as a student on-campus could come in and see me for specific guidance on an assignment, the web-based student could also access me and receive feedback on their assignment, albeit in a virtual format.

## Eureka

At the conclusion of this initial WWW course, I realized that I had "discovered" a way to deliver university level courses utilizing the WWW in a pedagogically appropriate manner. From this experience came the impetus to create another five additional WWW courses. To supplement Ed.3510/3520, which is intended for undergraduate students enrolled in our primary/elementary grade education program, I set out to create three other undergraduate web-course intended for students enrolled in our primary/elementary and intermediate/secondary school program (e.g., Ed.3040 "The Assessment of Language Problems"; Ed.4350, "Content Area Reading in the Intermediate and Secondary Schools"; Ed.4920 "Literacy in the Rural School). As a means of providing computer-mediated options for our graduate students, I created two web-based graduate courses in the area of literacy (e.g., Ed.6641, "Writing in the Primary, Elementary and Secondary Schools" and Ed.6647 "The Diagnosis and Assessment or Reading and Writing Difficulties"). By the conclusion of the fall semester, 2000, there will have been total enrolment of 255 students for the seven web courses I have created and implemented. In the four years I have been teaching web-based courses, I have had students from three US states, five Canadian provinces and two territories, and the United Kingdom.

While the five additional WWW courses have a structure that is similar to my initial course, taking into account a totally different content, there have been technologically significant additions to each of these courses. These additions were the use of PDF formatting for the on-line supplementary textbook, "streaming video", CD-ROMs, and the use of the SiteScape Forum, and enhanced version of the AltaVista Forum.

PDF formatting, utilizing an "Adobe Reader", can provide a students with a "printer-friendly" format for downloading and printing off a personal copy of the on-line supplementary textbook for off-line reference. The main advantage of streaming video is that in many of my on-campus education courses I provide demonstrations and simulations that are best understood if they are seen and heard, rather than merely read about in text form. Thus, any student can "observe" these demonstrations and simulations (e.g., how to administer and analyze a miscue analysis form of oral reading proficiency) at any time. This form of "narrowcasting" is aimed at a telelearner with the lowest common denominator technology (e.g.,

28.8 modem, a Pentium or mid-range 486 PC with a soundboard and a good video card), so as to make the streamed video accessible to the vast majority of telelearners. An alternative to this streamed video is the creation of CD-ROMs containing the same content as would be presented in the streamed video.

## Excelsior

Having been born and raised in New York City, I learned early on in public school that the motto of the State of New York was "Excelsior" (i.e., "Always Upward"). It is only now that I understand the complexity of that term. From my first teleconference course back in the Winter of 1981, to the e-mail note I received from a student I had never met, telling me how "great" it was to be able to take my course on-line, I now had a sense of the meaning of this continual upward momentum. What made that e-mail note so significant was that the student who wrote the note was located in Nain, Labrador. In relative terms, the distance between St. John's, where I was located, and Nain, Labrador, where she was taking the course, is comparable to the distance between New York City and Chicago.

When I consider the link between telelearning and teleteaching, I envision an environment with a revised paradigm of the teacher and learner. In this environment, the use of instructional technology "re-places" (as opposed to replacing) both the teacher and learner. In this zone of possibilities, both the teacher and learner are actively involved in a process of re-inventing their roles in the instructional/learning encounter.

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# Workplace Literacy with Online Discussions

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**Abstract:** Many workplaces require individuals to collaborate electronically to solve on-the-job problems with others who may be down the hall, in a building close-by, or in another geographical place altogether. As a consequence, adult literacy programs need to be developed based on effective ways to teach individuals to use literacy skills in a technological context. This paper discusses the importance of integrating electronic writing into workplace literacy programs, describes an approach to instruction based on reciprocal teaching, situated learning and strategy instruction and offers some evaluative commentary on the effectiveness of the program.

## Introduction

More and more workplace literacy skills involve electronic communication. Employees in a wide spectrum of contexts are expected to use computers efficiently and effectively to communicate with others and find information. As a consequence, adult literacy programs need to be developed based on the findings of research aimed at understanding effective ways to teach individuals to use literacy skills in a technological context. In this program we developed an instructional approach to teaching adults strategies for participating in electronic discussion groups

Workplace skills that demand some knowledge of technology with regard to information processing are steadily increasing; in 1995, an Allstate Forum on Public Issues claimed that an estimate of 65 percent of all U.S. workers are affected by this increase of technology in the workplace and by the year 2000, this figure was estimated to increase to 95 per cent (Verville, 1995). The potential of electronic communication is unlimited. Conceptions of adult literacy education are undergoing rapid change (Dirkx, 1999) and with that, there is a need to understand changes in the knowledge and skills of practitioners that are necessary to provide effective adult literacy programs.

Currently, literacy programs and other forms of literacy support for adults are primarily based on traditional classroom practice and face-to-face tutorial-type programs (Malicky, 1990). While these programs have made an impact, obvious limitations exist within such frameworks of delivery including issues of accessibility and flexibility for learning. Geographical location, for example, may exclude one entirely from the opportunity to access literacy programs. It is no surprise that inadequate funding and understaffing has left some rural communities without literacy programs or with programs that are located too far away to serve the rural poor (Sparks, 1998). Further, the need to provide child-care in the home, one's work schedule, or lack of transportation may prevent attendance at literacy support programs. Organizations and employers might be willing to provide opportunities to support literacy development if

more was understood about effective, flexible delivery of instruction. Additionally, many adults with low literacy skills may have had negative experiences with face-to-face instruction and continue to carry feelings of resentment, failure and poor academic motivation into their adulthood (Lavery, Townsend & Wilton, 1998) and therefore may welcome an alternative method of instruction. Moreover, computer-assisted instruction may in fact be especially well-suited for adult learners. It has been found that computer-assisted instruction "allows students to work at their own pace and level, which may be particularly effective for learners who exhibit great heterogeneity due to factors such as their wide age range (a common feature of adult programmes), varied levels of competence, and the time elapsed since their last formal instruction (Buckley & Rauch, 1981, Culclasure, 1982)" (Lavery et al., 1998).

Reciprocal teaching may be seen as an effective instructional strategy with adult learners in a computer-mediated learning context. Reciprocal teaching has been used previously in a study designed to teach students the cognitive strategy of generating questions about the material they had read. The results of this study showed that there were definite gains in comprehension, as measured by the tests given at the end of the intervention (Rosenshine, Meister, & Chapman, 1996). There are other instances where reciprocal teaching has been found to improve comprehension. In a study designed to explore the effects of a reciprocal teaching intervention created to enhance the lecture comprehension and comprehension monitoring skills of college students, the results of reciprocal teaching were encouraging (Spivey, 1995). The low-verbal ability subjects receiving the reciprocal teaching method significantly increased their lecture comprehension, as well as their detection of errors presented from text (Spivey, 1995). Based on previous research conducted on reciprocal teaching, it can be seen that it is an effective teaching strategy for learners of various levels. Reciprocal teaching provides an interactive link between student and instructor that may also involve teacher-led discussion, explanation, and modeling of strategy use to scaffolded attempts to use the strategy. However, reciprocal teaching may be even more effective if used specifically in a situated learning context, especially for adult learners who share a variety of diverse needs.

Today's workers need reading, writing, and math skills; computer skills, including knowledge of different software; problem-solving skills; the ability to participate in meeting; report-writing skills; the ability to read blueprints; and other skills and knowledge (Askov & Gordon, 1999). However, it is also felt that these workplace skills are better learned in the context of the workplace, rather than in contexts unrelated to actual workplaces. Further, Askov and Gordon (1999) suggest that because situated learning involves contextual instruction, based on real-world knowledge and experiences, it encourages transfer of knowledge and skills from the classroom to the job. Askov and Gordon (1999) suggest that computer-assisted instruction is one approach that educators may take to customize instruction to suit the needs of adult learners. Specifically, Askov and Gordon (1999) offer e-mail as an effective mode of communication for adults in workplace literacy programs, suggesting that learners can further communicate with others and workplace literacy programs, as well as write about their jobs and workplaces. Situated learning provides learners with a context that is meaningful to them. A workplace literacy program based on situated learning may include group discussions, instruction, and practice that focus on interpersonal and communication skills, solving work-related problems, and other pertinent challenges found in the workplace. It is essential that workplace literacy instructors acknowledge the fact that adult learners bring already existing knowledge and skills to workplace literacy programs. Askov and Gordon (1999) suggest that the integration of work-related materials and instruction in basic skills builds on workers' background of experience and knowledge while developing their abilities to use communication and computational skills more effectively in the workplace. Further, situated learning is an effective mode of instruction for adult learners enrolled in workplace literacy programs because it is directly applicable to their chances of finding and maintaining employment.

## Overview of the Instructional Approach

There has been a proliferation in the use of electronic discussion groups (EDGs) in many forums (Bonk, Appelman & Hay, 1996, Hemming, 1999, Kuehn, 1994, MacKinnon & Hemming, 1998). EDGs require participants to use writing in online discussions, a potentially effective avenue for enhancing literacy. Electronic discussions can provide opportunities for participants to reflect, pose questions, and examine content (Brett, Woodruff & Nason, 1997). Electronic discussions were used during the instructional phase of the program that took place at the Annapolis Valley Work Centre (AVWC), a place that provides support to adults with attitudinal, social, and educational barriers.

To qualify for the various programs offered at the AVWC, participants must live in West Hants, Kings, or Annapolis County, be at least 18 years of age, have an identifiable barrier to employment, and be referred by either a community service organisation or a professional. The participants of this study were enrolled in various programs offered at the work centre to develop necessary skills that may lead to increased access to educational, vocational, and employment opportunities within the community. The AVWC provides its participants with instruction in real kitchens, offices, and shops so the participants receive actual on-the-job training. In addition to job skills training, the participants are required to attend classes on personal development and academic upgrading. The participants who took part in this program ranged in ages 18-48 years. Further, the participants of this program were experiencing difficulty finding and/or maintaining employment, due to various obstacles whether they may be academic, emotional, or behavioural. Regardless of their unique challenges, all of the participants have varying levels of difficulty with literacy skills. This is consistent with the fact that "adults who have a history of not being in paid employment represent a critical group for education in basic literacy skills" (Lavery et al., 1998). Thus, the adults at the AVWC could benefit from an effective literacy program that may improve their chances of finding and maintaining employment.

There were 22 participants from the Annapolis Valley Work Centre who were involved in this program. At the beginning of the program, each participant completed a computer usage survey to reveal the extent of his/her experience with computers, as well as his/her attitudes toward computers prior to the program. In addition, each participant was asked to complete a written sample based on the content of a selected case study, without the use of a computer. Then, the participants received basic computer instruction using IBM Thinkpads, which would be used throughout the program. After all of the participants were comfortable with using the laptop computers, they began the instructional phase of the program, when they participated in a reciprocal model of instruction involving eleven (40 minute) sessions that taught three writing strategies for making entries into electronic discussions.

During the instructional phase of the program, the participants received a protocol of direct instruction on three specific writing strategies: explaining/expressing a viewpoint, asking pertinent questions, and writing effective responses. The strategies focussed primarily on writing, since many jobs require employees to communicate in written language and difficulty expressing events, for example, in writing may lead to problems with regard to finding and/or maintaining employment (Gregg, Sigalas, Hoy, Wisenbaker, & McKinley, 1996). The participants worked in heterogeneous small-groups with a research assistant during their regular class hours at the Annapolis Valley Work Centre. In addition to using the laptop computers to make electronic discussion entries, they also provided the instructions for each strategy, as well as the case studies, which provided situated scenarios based on workplace preparation, that were used throughout the sessions. Each writing strategy involved three sessions: an introduction to the strategy where the strategy is modelled (the use of modelling as a teaching strategy is one of the approaches heavily promoted in the National Literacy Survey (Lewis & Wray, 1999)), an application A where the participants receive some guidance, and an application B where the participants use the strategy independently. Each of these sessions consisted of the use of worksheets and study guides followed by the entry of the participants' response into the electronic discussion group. After the participants completed the nine sessions, there were two additional sessions that required the participants to work through a case study using all three of the writing strategies. The first of those sessions included guidance and support from the research assistant while the second session required the participants to use all three strategies independently.

A reciprocal model of instruction allows participants to gradually gain independence with regard to strategy use. Based on previous research conducted on reciprocal teaching (Rosenshine, Meister, & Chapman, 1996, Spivey, 1995), it can be seen that it is an effective teaching strategy for learners of various levels. Reciprocal teaching provides an interactive link between student and instructor that may also involve teacher-led discussion, explanation, and modeling of strategy use to scaffolded attempts to use the strategy. Thus, reciprocal teaching seemed to be an appropriate instructional strategy for teaching in a situated learning context to adult learners, who share a variety of diverse needs. The three sessions on each writing strategy throughout the instructional phase explicitly depict a model of reciprocal instruction. During the first session, the research assistant provided an overview of the strategy, a rationale for learning the strategy, and a thorough modeling of the strategy. For example, after discussing the strategy in depth, the instructor read the case study aloud while the participants followed along on their laptop screens. Then, the questions at the end of the case study were addressed. Each step throughout the strategy was verbalized and discussed so the participants became increasingly aware of the various steps and procedures involved.

As the instructor talked through the steps, the worksheet was completed based on the open dialogue with the participants. Once the worksheet was complete, it was time to make an entry into the electronic discussion group. While this was being done, the instructor talked through all of the steps involved. The second session consisted of a review of the strategy before the participants were asked to work through a case study using the strategy with the guidance and support of the instructor. The third session included the participants using the strategy, independent of the instructor. These three sessions provided participants with the ability to gradually gain independence in using each of the three strategy, thus preparing them for the final two sessions where they were required to use all three of the writing strategies.

In addition to the reciprocal model of instruction used throughout this program, situated learning provided a strong foundation for the program. Each instructional session was based on specific case studies. These case studies involved real life scenarios situated in various workplace contexts, relevant to the participants involved in the program. Additionally, within the various workplace contexts of the case studies, there were other issues being addressed such as personal development, problem-solving, interview skills, anger management, and other pertinent skills that may be required in the participants' future workplaces. Thus, the design of this program enabled adult learners to use their already existing knowledge and experience throughout the instructional phase of the program, which was further based on content that was both relevant and meaningful to the participants involved.

## Observations and Reflections

The computer usage surveys revealed that 68 percent of the participants had used e-mail and 41 percent of the participants had used chat groups prior to this program. Additionally, 14 percent of the participants considered themselves to be heavy computer users (many hours per day) whereas an additional 14 percent of the participants considered themselves to be light computer users (approximately once per week). After receiving the reciprocal model of instruction, 95 percent of the participants' online discussion entries showed evidence of using the worksheets and study guides. Further, after receiving this form of instruction, 55 percent of the participants showed a significant increase in electronic discussion entry length (number of words/number of sentences). Additionally, qualitative data was gathered based on observational information throughout the duration of the study, as well as interviews conducted by the research assistant after the participants' completion of the program.

Throughout the instructional phase, there were notable changes in many of the participants. With the initial introduction of the study, many participants showed enthusiasm with regard to using computers for discussion as opposed to face-to-face class discussion. One participant, after the introductory session of the first writing strategy, shared a personal story of his childhood memories of being ridiculed in front of the entire class for not knowing the answer to the teacher's question. He further added that since then, he did not like to participate in class discussions. Because of this, he was very interested in the alternative form of discussion through the use of computers. Also, personal thoughts and feelings may have been more readily offered through the less threatening form of electronic communication. Additionally, the content of the case studies used in this study was an important aspect of the program. The case studies used throughout the program were relevant to the lives of the participants. The case studies allowed the participants to build on their already existing knowledge and experience when working through the three writing strategies. Moreover, the participants gained useful practice in problem-solving, personal development in areas such as self-awareness, self-esteem, and anger management that are essential components of their own lives, both at home and in their future workplaces. Further, realising the various interests of the participants involved in this program, the case studies were situated in a variety of workplace contexts. Furthermore, the participants claimed to acknowledge the direct connection between the writing strategies being learned in the context of the case studies and their chances of successfully finding and maintaining employment. Since finding and maintaining employment is a common goal between all of the adult learners who participated in this program, this seemed to have been a driving force of motivation for many of the participants.

In addition to the increased amount of writing in many of the participants, it was also evident that there were other noticeable changes in some of the participants over the duration of the program. For example, one participant said on the first day that he "never liked writing, did not like writing, and never will like writing." When asked why he felt that way, he put his head down and muttered, "'cause I'm no good at it." However, after receiving the reciprocal model of instruction in a situated context, this same

participant was heard telling another student about the program. He expressed with enthusiasm that he "gets to write lots using a cool computer so everyone else can read [his] stuff!" In addition to this obvious change in attitude toward writing, he showed a particularly significant increase in the amount of writing he produced over the duration of the program.

On the last day of the program, after the participants had finished their final session, they were asked for their honest feedback regarding the program, whether or not they found it useful, and if they would be interested in participating in a similar program in the future. All of the participants responded positively to all three questions addressed. More specifically, when speaking about the reciprocal model of instruction on which the program was based, one woman added, " I liked that you didn't just throw us in there and expect us to know what to do right away – it was really straightforward" while the others agreed. With regard to the use of the case studies, many of the participants claimed that they were interesting and useful because, "you never know when something like that could happen to you" and participating in this program resulted in increased confidence in their abilities to problem-solve in their future workplaces. Although all of the participants stated that they felt comfortable using all three of the writing strategies on their own, many of them requested copies of the worksheets and study guides to show others and to use in the future.

## Concluding comments

This program was designed to use a reciprocal model of instruction on the adult learners. We were interested in assessing the effectiveness of the program with regard to how they viewed themselves as literacy learners, as well as whether or not their electronic discussion entries were influenced by the instruction. Reciprocal teaching has been used extensively in the past in studies designed to examine the effectiveness of teaching cognitive strategies (Palinscar & Brown, 1984). Results in many studies suggest that reciprocal teaching has potential to be an effective instructional approach to teaching workplace literacy skills. In addition, this also examined the effectiveness of situated learning in workplace literacy programs. Gershwin (1996) documented workplace literacy instruction based on situated learning led to skills transfer among learners. It is also believed that these workplace skills are better learned in the context of the workplace, rather than in contexts unrelated to actual workplaces. Further, Askov and Gordon (1999) suggest that because situated learning involves contextual instruction, based on real-world knowledge and experiences, it encourages transfer of knowledge and skills from the classroom to the job. The adult learners who participated in this program benefited from using their already existing knowledge and experience while developing their abilities to use communication and computational skills more effectively in the workplace. Further, this program showed that the use of electronic communication in the instruction of writing strategies to adult literacy learners may be an effective means of customising instruction to suit the needs of adult learners.

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# Virtual Literature Circles: Message Board Discussions for Strengthening Literacy

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**Abstract:** This paper reports current findings from an ongoing research project that is an offshoot of a three-year, $155,000 "Best Practices in the Use of Technology" grant awarded to one of the co-authors, 1998-2000. The portion of the study reported here focuses on the cognitive complexity of student written responses in *Virtual Literature Circles* or electronic message boards utilized according to the structure of more traditional classroom literature circles. The ex-post-facto research question examined was: Did the cognitive complexity of student responses increase with continued use of Virtual Literature Circles? The findings of this simple study suggest that this research question is best answered in the negative, and shed light on existing higher-order literacy theory and on the effectiveness of Virtual Literature Circles in their current pilot state. Additionally, knowledge was gained in this study regarding new instrumentation being developed to help with the unique challenges of assessing student message board responses.

## Background

**Message Boards:** Elementary students find message boards to be unique web-based forums to engage in asynchronous discussions with other students. While current communication tools emphasize chat, instant messaging, and desktop video conferencing for real-time communication, message boards allow individual teachers to engage students from different schools on the same topic while maintaining autonomy in how each teacher schedules the day in individual classrooms. This connectivity along with individual flexibility provides teachers with the opportunity to integrate computer technology and the Internet within the reading program.

**Literature Circles:** The instructional process named "Literature Circles" by Harvey Daniels has produced significant improvements in various literacy outcomes (Daniels, 1994). Literature Circles are a combination of reading for interest, cooperative learning, and independent study. Teachers introduce Literature Circles by providing various literature sets of up to five books each. From this variety of books, students personally select the book of greatest interest. Based on the book selected, students form study groups to read and discuss various aspects of the literature. Once each student in the group reads a preset number of pages, the group members come together for discussion. Within the group, cooperative learning roles are assigned to each student. Within these roles, students engage each other in discussion, with the goal being to understand the literature as deeply and meaningfully as possible. During student discussions, the teacher remains engaged by facilitating the conversation. The teacher's role is to intervene only when students get off the subject, cannot settle a dispute, or seem stymied by the task.

**Virtual Literature Circles:** Combining message boards with the basic principles associated with Literature Circles created the phrase "Virtual Literature Circles," coined by one of the co-authors.

**Challenges in Assessment:** Assessment of cognitive complexity of student message board responses is important in determining the effectiveness of Virtual Literature Circles. However, this sort of assessment is difficult. There are few measures of cognitive complexity available for rating written responses in traditional writing environments, especially for the shorter responses common to many elementary-aged students. This challenge is magnified in Virtual Literature Circles where student written responses are rather like unique hybrids between short contributions to group conversations and traditional written responses. In order to help address this challenge in their on-going Virtual Literature Circles grant and research projects, the authors are developing a simple cognitive complexity rating scale that it is hoped will continue to be refined, especially for use in the message-board environment. It is the earliest version of this rating scale that was used for the data analysis in this report, and will be explained in slightly more detail ahead.

## Purpose of the Study, Research Question, Design, and Significance

This study was conducted to examine the depth of student reading and writing experiences in Virtual Literature Circles. An overall goal for the grant involved in this study was that students who participated in Virtual Literature Circles would be able to interact with other students at advanced (or at least advanc*ing*) levels of cognition and that message board response threads would maintain the intellectual continuity of the discussions, similar to a regular classroom discussion (or maybe even be enhanced by the asynchronous environment). This paper has been undertaken in order to *begin* to examine these issues and one research question was examined. This question was crafted ex-post-facto, but prior to formal data analysis and is as follows: "Did the cognitive complexity of the student responses increase with continued use of Virtual Literature Circles?"

This research question was examined by first dividing in half the multiple written responses chronologically posted by each student. Then the mean cognitive complexity of the first half of each student's responses was compared with the second half, looking for mean score gains from the first half to the second half, in order to demonstrate that the cognitive complexity of student responses increased with continued use of the Virtual Literature Circles.

This study is small in scope, but may be significant because the findings provide educators with a clearer understanding of the potential educational outcomes that may result from the fusion of two seemingly complimentary and potent educational tools: Literature Circles and Internet message boards. This is an important step in continuing to delineate the results of combining traditional literacy instruction with the technological tools of 21st Century.

## Method

**Subjects:** During a two-week study in the spring of 2000, 125 third and fourth grade students from five rural schools in central Missouri, USA, participated in reading and discussing *Fig Pudding* by R. Fletcher. All students listened to the reading of the story or personally read it. The text was discussed on a chapter-by-chapter basis in Virtual Literature Circles formed through message boards maintained by one of the authors. The discussions from a random sampling of 25 participants make up the population for this study. Students made different numbers of responses, but all responses were collected and analyzed per student in chronological order in order to evaluate possible gains due to continued use of the Virtual Literature Circles.

**Data Analysis:** The message board discussions were quantitatively examined for levels of cognitive complexity with a simple 4-point scale developed by one of the authors. See Table 1.

**Table 1:** Cognitive Complexity Rating Scale

| Reconstructive Responses | | Constructive Responses | |
|---|---|---|---|
| 1 | 2 | 3 | 4 |
| Very Simplistic Text-Dependent Response | Text-Dependent Response | Text-Independent Response | Text-Independent Response with Complexity |

This Cognitive Complexity Rating Scale was an attempt by one of the authors to create an instrument useful to the particular needs of assessing message board responses. They attempted to create an elementary message board rating scale somewhat akin to aspects of the McDaniel's Cognitive Complexity Scale (McDaniel & Foss, 1992, unpublished, as reported and published in Foss & Stensvold, 1994) by creating a scale from the core dichotomy of the hierarchy of annotation types presented in the Read-Encode-Annotate-Ponder (Eanet & Manzo, 1976) reading, writing, and thinking strategy. The two authors independently rated the student responses according to this new rating scale, and the means from these two sets of ratings were used for the student cognitive complexity scores. The traditional psychometric interrater reliability in this pilot study was only .37, considerably lower than would be desired or perhaps even considered acceptable. However, according to Sax (1997), in some situations, especially where limited testing options are available, or the costs required to increase reliability may be prohibitive, even tests yielding low reliabilities may be useful, especially when they are used in exploratory or probative research with groups, rather than individuals. Additionally, when analyzing how often the rater mean scores for individual students were within 1 point (on the 4-point scale) of each other, there was an interrater agreement of 88%. For these reasons, it seemed reasonable to the authors to continue to report these findings, as probative as they may be.

Each student received two cognitive complexity scores: a mean of the first half of their message board responses and a mean of the second half of their message board responses. The scores were calculated according to the 4-point scale described above. Each student's score was the average of the two raters' assessments. The research question was analyzed by comparing the group means between the first and second half of the individual student responses, in order to see if cognitive complexity increased with continued use of Virtual Literature Circles.

## Results

The absolute differences between the group means of the first and second half of the student responses were quite small (Half 1 = 2.23 and Half 2 = 2.38). A paired-samples T-test was calculated between the group means of the first half and the second half of the student responses and did not show statistical significance at the .05 level. Additionally, using the effect size measure of Cohen's *d* (Cohen, 1977), the difference between the means was relatively small (Cohen's $d = .27$).

## Discussion

The results presented above suggest that the research question of this study should be answered in the negative. It seems reasonable to claim that the cognitive complexity of the student responses did *not* meaningfully increase with continued use of Virtual Literature Circles. Although this finding is small, it is not without importance. It bears upon existing theory about cognitive complexity and higher-order literacy, and it sheds light on what we may hope to find as valuable in using electronic message boards. Additionally, knowledge has been gained regarding the rating instrument used in this study, allowing for future refinements.

The results of this study support the descriptive theories of higher-order literacy of Manzo and Manzo (1995) and Thomas (in process), most notably the argument that higher-order responses to text are often dispositional, or driven by orientation and will. It is embedded in this theory that higher-order responses to text, or responses of higher cognitive complexity, seem to be highly related to one's desire, tendency, or will to respond in such a way, and that this response tendency is not often impacted by external factors. Some have a tendency to respond in higher-order ways, and others do not. In this study it is apparent that the cognitive complexity of student responses was predictable between halves; the response tendencies of the students at the beginning of their involvement in the Virtual Literature Circles was very similar to their response tendencies throughout their continued involvement in the project. Therefore this study suggests that the students' tendency toward cognitive complexity seems embedded in the students themselves, more than in a stimulus provided by the message board environment.

This then, sheds important light on some of the educational dynamics that may be (or may not be) inherent in Virtual Literature Circles and other similar uses of electronic message boards. Since observation reveals that elementary students find message boards to be stimulating forums to engage in asynchronous discussions with other students, it is reasonable to hope that this would have an impact on

helping to increase the cognitive complexity of written responses. It would be hoped that the more engaging and interactive the learning activity, the greater the increase in cognitive complexity. This, however, in these immediate findings, does not seem to be the case for Virtual Literature Circles, at least not in their present pilot-study form. It is possible that other, more finely tuned aspects of stimulating Virtual Literature Circle discussions are needed. It is possible, for instance, that focusing specifically on the types of question prompts used by the discussion board moderators may be the key to eliciting higher-levels of cognitive complexity, as may be suggested by the "Just-Ask-For-It" hypothesis of Manzo and Manzo (2001). Future studies of Virtual Literature Circles should perhaps focus on intervention strategies, perhaps as simple as question prompts, in order to find ways to help Virtual Literature Circles increase student cognitive complexity.

Finally, this study has led to the initial stages of developing a much needed instrument for assessing student responses in message board environments. Although the interrater reliability of the author-created rating instrument was low, it at least provided a starting point for attempting to meaningfully assess and analyze the hybrid response forms unique to message board environments. Future studies using this instrument in Virtual Literature Circles should help refine this instrument, potentially providing an important tool for use in the inevitable merger of the Internet environment with traditional literacy practices.

## Summary

This study is small in scope, but still may be seen as important because the findings provide educators with more information to help with understanding the potential from the fusion of two seemingly complimentary and potent educational tools: Literature Circles and Internet message boards. This is an important step in continuing to delineate the results of combining traditional literacy instruction with the technological tools of 21st Century.

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**Art Responding Through Technology (http://www.vtartt.org)**

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**Abstract**

The VT ARTT Project (http://www.vtartt.org) is an online arts mentoring program now in its 5th year. Begun as an initiative of the WEB Project, ARTT has given Vermont art teachers and students access to training with state of the art web-based technology in order to improve student learning. It now continues beyond the Web Project's TICG funding as a non-profit with sister music project - VT MIDI (http://www.vtmidi.org) - serving students and teachers of Vermont through online arts mentoring, collaboration, and professional development in music composition and the visual arts.

**Introduction**

VT music teachers began sharing student work online in an effort to meet the new composition standards in the VT Frameworks and Standards. Those who had not been prepared to compose, or teach composition, felt that by enlisting the aid of professional composers they too could meet the new teaching standards. Vermont is a mountainous state, where severe weather can disrupt travel at any time during the school year. Teachers in districts unable to afford to bring composers into classes on a regular basis, or to take their students on out of school fieldtrips in order to visit the artists in their studios, looked to technology for a solution to these geographic and monetary barriers. Initially, student compositions from a few schools were shared via email with professional composers through a VT State seed grant. This trial met with success and in 1995 WEB Project support helped to redesign the process as a threaded discussion. Visual arts teachers receiving grants of multimedia equipment

from the WEB Project grant saw the promise that this online critique process held and so developed the ARTT Project connecting visual arts students with artist/mentors. Self examination of ARTT practice reveals that the strength of the network lies in all participants - students, teachers, and mentors - learning and growing through conversations focused on student work in progress. Through ARTT a dynamic multi-generational, multi-media, and multi-cultural community has grown. A recent key note address at our annual meeting of MIDI/ARTT given by Frank Watson, a state leader in technology, pointed out the 5 stages of technology integration identified by ACOT (Apple Classroom of Tomorrow http://www.apple.com/education/planning/profdev/index4.html) in their 10 year study of technology implementation. That study delineated the stages as entry, adoption, adaptation, appropriation, and invention. Our speaker pointed out that MIDI/ARTT has gone through those initial stages and is now focused on inventing new uses of the technology to advance the primary goals of teaching and learning for students and educators. This paper will explore the professional and technological growth that three members - mentor, teacher, and student - have personally experienced through their work with ARTT.

**Backgrounds**

Graciela Monteagudo is an Argentinean puppeteer and performer with Bread and Puppet Theater of Vermont, she creates her own shows incorporating both larger-than-life-size and hand puppet formats. She has done extensive work in Arts in Education, conducting residencies in schools that culminate in big puppet shows with over a hundred children on stage. Her puppets are made out of recycled materials, sticks, paper mache and found objets. Graciela has studied Photoshop and web design through ARTT programs, and has begun exploring photography and digital imaging.

Marty Leech teaches a broad spectrum of visual media at Missisquoi Union High School in Swanton, located in an underserved region of northwestern Vermont. Marty began her work with ARTT as a full time art teacher - as a result of pursuing her interests in technology through ARTT Marty is now also teaching technology courses both at MUHS and at the graduate level. She has actively involved the integration of technology into the artroom.

Majken began her work with ARTT as a junior at MVUHS. She was interested in digital imaging and website design, and shared her work online for school assignments as well as original pieces created on her own. She has graduated now, and will be participating online as a mentor to other students.

**Online practice**

Mentor: When Graciela logs on to the ARTT site, she first clicks on its 3D section. She tries to comment on every new piece that has been recently uploaded. When time allows, Graciela visits the Digital Image area and then the Traditional Arts section. Although her main area of expertise is not in those two media, she offers critique on composition and other design aspects of the students work that are universal. New messages posted on the threads she commented on are automatically emailed to her. This allows her to respond in a timely manner to any new developments in those threads.

Throughout the three years of Graciela's involvement with the project, she has attended a number of conferences and retreats in which the online community spends 'real time' together. Her focus during these meetings is not only to learn techniques for manipulating digital images, but specifically to develop a dialogue with the art teachers, students and administrators who make up the online

community. She has been interested in the process of learning how to ask the right questions and how to provide critique. She feels the ARTT site has improved greatly as students and teachers have learned how to ask for specific comments and feedback as opposed to asking general questions like: "Do you like my work." which are not conducive to in depth critique. The ARTT group has also learned that it is most helpful for a student to describe the process of their work as much as possible, clearly stating what they feel works and what they would like help with.

Teacher: Marty writes that one of the benefits for our rural student community is the wider view often offered online by artists, teachers, and students from all over the state.

Students initially learn the "language of art" (art terminology, elements and principles of design) in the classroom, then hear it again in the mentors comments on their work. This successfully reinforces what is being taught.

The online process offers another means of achieving specific Vt standards from the VT Frameworks of Standards, i.e.: "Artistic Proficiency, 5.28 Students use art forms to communicate, showing the ability to define and solve artistic problems with insight, reason, and technical proficiency."

Student: Majken describes herself as an 'internet nut' - ARTT was her introduction to message boarding online, since starting she has expanded her experience and is now the administrator of her own message board. She adds, "I post my digital artwork on the internet all the time on a few different message boards as well, just for fun. ^_^"

**Benefits of commenting online**

Mentor: Graciela says that students who live in rural areas and have artistic interests feel isolated in their communities. The online critique experience opens up a world of peers for these art students. The attention paid by a professional artist to their work can enhance the real value of their artwork, for themselves and for the community, and even for their fellow students.

Teacher: Marty thinks that one of the most important and dramatic effects to participation is student validation. Often students are so used to their teacher's comments or encouragement concerning their work that it does not have the same effect that a new individual's insight may have. The mentors also give a more in-depth critique than is possible in the busy classroom. They may take an entirely different skew on a project and offer interesting facts that may not have been considered before, such as an historic perspective in terms of past artists or eras.

The online experience addresses the issue of literacy: as students articulate their intent online, they must communicate effectively. The ensuing dialogue encourages growth in written expression and also addresses Communication Standard 1.16 "Artistic Dimensions" which encompasses skill development, reflection and critique (students improve upon products and performances through self reflection and outside critique, using detailed comments that employ the technical vocabulary of the art form), and making connections.

Student: Majken feels that posting artwork online opens up the forum to a wide variety of people. The wonderful thing about the internet is that it is available to everyone, everywhere. Artists and students from all over the world can converge on a website and share ideas and techniques, all for free, and

without having to move from their chairs. It reminds her of the title of a CD by Jamiroquai, "Traveling Without Moving." She sees resources and personal connections as being a lot easier to come by now that the internet is in use.

**Drawbacks**

Mentor: Monteagudo feels that the online critique process works best when teachers in the schools have enough time to follow up on the students work and are able to post the images with the changes they have produced as a result of the dialogue with the mentors. However, it is a sad reality of the Vermont school system, that the art departments are under funded and teachers have on average 500 students visiting the art room for approximately 45 minutes of instruction each once a week. This makes it very difficult for students to actually post images of finished work. Without that final viewing of the student work, the mentors do not have a clear idea of how their feedback was received and processed by the student.

Teacher: Marty finds similarly, that the only drawback for her is lack of time, "I get so wrapped up in the day to day activities that time slips away and we don't get the cycle completed - a disappointment for all - the student, the teacher, and I think, mostly the mentor who has put a lot of time and thought into the response."

Student: Majken sees amother failing in internet communication, especially through message boards, as lacking an ability to get across what you mean right on the spot. She explains that "when you talk with someone face to face, you can understand what they're saying a little better based from inflections in their voice and such... not available on the internet, in a text-based forum."

**Innovation**

Mentor: One of the formats that Graciela sees has been highly successful was created by art teacher Jan Danzinger. Her students take a two week Art Challenge class, and are free to create what they choose to, in any available medium, with the express purpose of posting it online while in progress for mentor critique. Because the process is geared toward offering their work for the professional artists, the students have the time and the interest to post their final projects as well as images of second or third drafts. In this way, the mentors can clearly see how their critique affected the creative process and learn from that for future reference.

Another innovative use of the ARTT project that incorporates both online and real time critique is the after school format developed by Rebecca Raymond at Manchester Middle School. Rebecca enlisted the aid of parents and mentors to provide students with a regularly scheduled after school ARTT activity, built on the models already in place for after school intramural programs.

Teacher: Marty's participation in ARTT has led her school board and administration to approve a new art/technology course - Digital Imaging in which her students not only create traditional art work, but have an additional focus on technology as they learn to digitize, scan, and manipulate their work. She is finding this to be a wonderful opportunity for students to expand their knowledge of technology while developing their artistic abilities and appreciation.

Student: Majken feels that the online ARTT program is especially beneficial to students like herself, either who have just started, or are already well-versed in digital media. She sayd online message boards are ideal to share graphic artwork, as one gets to see the original product, and not a scanned

copy.

**Summary**

VT ARTT's strengths are multiple. The technology has developed which allows us to easily share student artwork online through password protected discussion forums with attached files. In the early days of ARTT a two day training with follow-up instruction was needed just for participants to learn how to capture a still digital image from video using Premier. With the invention of the Sony Mavica camera - using a floppy disk to take stills that are immediately readable and uploadable - teachers were able to immediately move their ARTT time away from learning to use the technology toward teaching their students how to take effective images using the Mavica, and how to manipulate images using Photoshop.

The network has also grown stronger through action research conducted by WEB Project, VT MIDI, and ARTT participants has lead to practices that include new ideas about how to critique and receive critique online. ARTT recently added the prompt, "What Works Well?" in addition to a general request for description of the student work - this in response to mentors finding they were inadvertently hurting the students feelings by suggesting changes to parts of their work that the students actually felt were the most successful. The 'safe' environment, where students are able to post artwork and ask for help without fear of getting "dis-ed" is highly prized by the ARTT community, which self-monitors postings of questions and responses.

The Post-Respond-Reply cycle, first developed in VT MIDI under the WEB Project, is another key to making ARTT an effective tool for teachers and students. Original art is Posted while in progress, mentors Respond, and students Reply to the mentors' suggestions - posting new versions of their work as it progresses. When students have real questions that concern them about the art, mentors respond in a timely fashion and with specific suggestions, and students reply to let the mentors know how their advice was incorporated - or why it was not - the cycle is complete.

Of the original seven participants in ARTT, five are now trainers who provide workshops and assistance to the newest members of the network. Students like Majken have grown up with the project and continue to participate even after graduation or college takes them away from their community. Mentors such as Graciela have developed expertise in the new areas of digital imaging and web design which serve to enrich their personal art and provide new interests which they can share with their students.

Although the active work onsite is password protected, an example of an ARTT discussion can be seen at http://www.vtartt.org/jellyfish.html. Please contact Penny Nolte, ARTT Coordinator, for additional information.

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# Taking Language Arts Instruction to the Applied Level Through Integration of Graphic Arts Technology

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**Abstract:** In order to meet a documented need for more advanced ELA (English Language Arts) electives, the secondary ELA teacher in an isolated rural school in southeastern Wyoming integrated graphic arts technology in a new course, *Literary Desktop Publishing*, to meet advanced students' needs. Students acquired graphic arts communication skills that are currently used in local businesses and met district ELA standards and benchmarks as well. The course is taught to motivate students to think for themselves, to solve problems, and to read, interpret and apply complex operations in computer applications. Other secondary schools in the district have adopted the course, as well.

## Introduction

Prior to the inception of *Literary Desktop Publishing* as a district-approved ELA (English Language Arts) class in Albany County School District #1, many students at Rock River High School, one of three high schools in the district, would complete their required English courses by their junior year. Because of mandated Carnegie units, 8 semesters of attendance, these students would face 2-3 study halls in a row, then at least one "teacher's assistant" period to follow while they finished their required courses and electives their senior year. Their time was not being used prudently. Also, it was not possible to hire additional staff to offer more electives, because of Rock River School's unique position of being a K-12 facility under one roof. There is neither room nor time in the secondary and elementary schedules to add sections of secondary courses or specialized electives. Consequently, many of the students were asking to come to the ELA classroom during study halls to work on computers, since no other electives were available in the small, isolated rural school that explains the configuration of RRS. Various classes go as a group to the school's computer lab, which is comprised of one Mac Quadra and 16 Mac LC II's, but students are not allowed to go independently, because there is no on-going supervision in the lab. Additional staffing for on-going care, maintenance, and supervision in the lab is not a probable alternative.

The school serves as an "option" school for students in the district. For a variety of reasons, students can elect to attend Rock River School as a matter of choice. The end result is that RRS has a unique population of students with barely enough classes and services to accommodate the need created by the option of attendance. As one example, RRS has neither the facilities, equipment, nor staff to accommodate a football team. The real bottom line is that the student population of RRS is 40% identified as needing special services, and .06% as qualifying for National Honor Society membership.

The students are introduced to computer applications in their earlier ELA classes (20 percent of instructional time is allotted to computer applications, at the discretion of the ELA teacher). As a result of the exposure in earlier ELA classes, students were looking for electives where they could learn more computer applications and find places to use what they had learned. Over a period of several years, the

English teacher had spent any and all available resources to enhance the technology available in the English room. Because of a recent in-depth study of English language arts in the district, when additional monies are made available for the acquisition of texts, as well as the purchase of new technology, the English classroom is now equipped with a Macintosh G3, a G4, as well as an iMac. Because of the computers being housed in the classroom, a closer scrutiny can be maintained over the student use and (potential) abuse of the equipment. Therefore, supervision is not usually a problem.

## Rationale

The impetus for developing, securing approval, and then teaching *Literary Desktop Publishing* at Rock River School for the last two years came from many sources. First of all, because of a close association with the University of Wyoming's Instructional Technology faculty and facility, the ELA teacher has had some first-hand experience with what is possible in an e-classroom that is run the way it should be run. Further, because of personal experiences at SITE 1999 and SITE 2000, it has become clear to the ELA teacher that a constructivist approach to applied communications skills might be just what is needed to breathe some new life into the common core of skills taught at RRS, especially considering the school's diverse, identified population.

The school is undergoing massive school-improvement reconstruction, due to district-wide and state-wide school reform initiatives. The *Literary Desktop Publishing* class was designed to be a part of those initiatives in a substantive way. The same old way of doing "things" simply does not work, any longer. According to the Sept., 1996 report of the National Commission on Teaching and American's future, What Matters Most: Teaching for America's Future, points to the close relationship between students' achievement and the knowledge, skills, and **practices** of the teacher. According to this report, what teachers know and can do is crucial to what students learn. Policy implication #3 from that text says: "School reform cannot succeed unless it focuses on creating the conditions—including the curriculum contexts—in which teachers can teach well." From student feedback obtained in the first two semesters that the *Literary Desktop Publishing* class has been offered, it seems as though students themselves feel that allowing self-paced progress through the various applications, to read what is necessary to make the applications work, is an extremely successful way of enabling students to learn. To teach the class requires a new definition for the term "teaching." The teacher allows the students to discover the secrets of the applications, and then apply those secrets to various projects.

Further, as Richmond said, "Effective use of technology to support teaching and learning across the curriculum has the potential to transform the learning environment." He points out that there is much experimental use of technology in classroom learning and many attempts to implement change are locally conceived. (Richmond, 2000, p.2) While some caution in new approaches is warranted, the ELA instructor felt inclined to follow the advice of Lee Iacocca who said, "Either lead, follow, or get out of my way." The adoption of the class by the other, larger high school in the district this year, is some validation for the course's approach to literary desktop publishing, meeting standards, and teaching the common core of skills and competencies in English/Language Arts.

Richmond stated, "Just as the industrial revolution created tools that served to off-load the physical labor previously carried by both 'man and beast,' the information revolution is creating tools that promise assistance with the intellectual dimensions of our lives. While the technologies of the industrial revolution were at times misused and misapplied, so, too, the technologies of the computer-generation must find their appropriate place within our communities and our schools. " (Richmond, 2000, pg.3) One of the most rewarding assessments of the class this year has been their articles on their perceptions of the utilization of all of the skills that they have learned. One student, who plans to be a lawyer, said that at first she couldn't think of how a lawyer might use the various applications. Then she thought some more, and the ideas for use of the applications by a lawyer just jumped into her head.

In his book Business at the Speed of Thought, Bill Gates, Microsoft CEO said, "The old saying 'knowledge is power' sometimes makes people hoard knowledge. They believe that knowledge hoarding makes them indispensable. Power comes not from knowledge kept but from knowledge shared. A company's values and reward system should reflect this idea." Another remarkable result of the introduction of *Literary Desktop Publishing* as a class for two years at RRS is the amount of sharing, collaboration, and actual

talking among students that I have observed. If one student figures out one little quirk in a particular application, all I have to say to one struggling with the same piece is "Talk to Justin. I believe he got that piece figured out." Then the two students will talk to each other, even if they might not have under other circumstances. The magic works.

## Background

The ELA teacher had tried for years to systematically incorporate technology integration in her classroom, and English students still felt as though they were not getting enough exposure to various applications of computer expertise. Even though in the regular ELA classes, 20% of the total instructional time was devoted to technology utilization and application, it became obvious that additional exposure was needed. However, as students advanced through Rock River High School, they had to be aware of the need to accumulate "English credits" for graduation. As they got older, they could not have periods allocated to classes that did not count toward graduation.

The idea and motivation for developing the course occurred from a "Schools-to-Careers" job-exploration externship experience in the summer of 2000, that the ELA instructor had. This experience enabled the instructor to explore the expectations of local businesses and industry for entry-level employees in graphic arts communication. Time was devoted to working at the local newspaper, observing a "high tech" graphic communications firm that does business world-wide, a local photo processing business, and a local printing firm.

The instructor discovered that the skills and competencies expected of newly-employed persons in the Laramie area are similar to those being taught in the *Literary Desktop Publishing* class. Although Laramie is certainly the largest population area close to RRS, and Laramie is the location of most available jobs for RRS graduates, it must be noted that "the Laramie area" is a small version of what is available in larger, metropolitan areas, such as Denver and the front range. But it was a start.

The course was taught one semester in 1999, and the second enrollment was finalized in the fall of 2000. For both sessions, students seemed eager to "get into" the class, and underclassmen frequently asked when they would be allowed in.

Because of the "Schools-to-Careers" initiative, and because of additional materials that were procured through a "Schools-to-Careers" mini-grant opportunity, the applied language arts class offered at RRS materialized. It hadn't been done before. The ELA curriculum in the district and certainly in RRS was the very traditional English 7, English 8, English 9, English 10 sequence, with Publications being offered as "junior" English and alternating electives being offered as "senior" English. The electives were standard: Drama as Literature, English literature, Research Writing, Play Productions, and Writer's Workshop. The concept of offering a new English class was pretty much unheard of. In the fall of 1999, 6 students enrolled in the new class, even given the possibility that the class would not be approved by all the various committees and supervisors who would have the opportunity to turn down the initiative. The first six enrolled, knowing that the class may turn into Research Writing, pending the decision of the approval process.

## Implementation

In getting the course approved, the instructor related the computer technology components as well as the language arts components of the class to the district and state ELA standards of Reading, Writing, Listening, Speaking and Integration. It should be noted, that in Wyoming the implementation of standards-based instruction and assessment began, state-wide, with English language arts. For that reason, all new curriculum offerings for any school, need to be explicitly aligned to state and district standards. For *Literary Desktop Publishing*, that job was not difficult.

For example, the students are asked to read and comprehend what ever is necessary to make their particular computer application work. No chapters are assigned, but students are asked to read necessary directions to aid in their use of the computer applications. They are also asked to read trade magazines about current technologies and career opportunities involving computer technologies. They then give speeches about what they have discovered. They listen to demonstration CD's that teach the direct instruction of the applications. They listen to each other's speeches. They write a term paper and weekly reports based on their exploration of "techno-trends." They give a major speech to the entire school about their conception of current "techno-trends" They create an original piece of literature, and then they create the graphic to go with the original piece of literature. All of the language arts standards are covered.

After the course was written to align to district and state standards, the approval process was initiated. There were many hurdles to overcome.

It didn't take much convincing to get the principal on the side of the new course. He had to deal with the disciplinary situations that are a natural consequence of students having three study halls in a row. He supported the new class as a solution to a problem that he had to face. Also, the local Site-based council had first-hand experience, through interviews, about the students' views of three study halls in a row. The senior students told the Site-council members that three study halls in a row is a waste of time. Then, the council asked the question, "Why can't there be more electives offered for upper-level, advanced students."

On the district level, the going was not as easy. The business/computer department felt as though the course infringed on their "turf" of teaching computer applications. The ELA instructor was told she would get "no support" for a class that was out of the ELA domain, that she attempted to get approved out of the traditional time sequence, and that students had registered for before it was approved. Those concerns were answered in time. Once in district committee, the course again hit a roadblock. Concern was raised as to how to count it for English credit. The person who raised the concern had not seen the alignment document that specifically answers how it is an English course that meets English standards. The small concession of calling the course *Literary Desktop Publishing* was one solution to those concerns. If the title of the course included an ELA reference, then perhaps it would not be challenged by a college as not having sufficient rigor and relevance as an English course.

## Design

Examples of computer applications used by the students in the class included Adobe PageMaker, PhotoShop, Premier, Bryce (a 3-D landscape application), Claris Home Page, and QuickTime VR. Other computer applications that the students were introduced to in the second year of the course included Painter 6, Design Your Own Home, After Effects, KPT 6 (a Photoshop plug-in), Typestyler 3, Textissimo and iMovie 2.

The specific utilization of these applications have included, but are not limited to: design of the cover of the 2001 Longhorn yearbook, design of the 2000 graduation multi-media event, design of the multi-media visual aid that was used to accompany on of the 2000 graduation speeches, design of the school web page, design of the school's first literary magazine, design of the 2000 graduation program.

Students also used multi-media applications such as Hyperstudio to incorporate text, images, and sound as part of the communication process. These tools challenged the students well beyond the usual word-processing and "word art" software used in most classes.

Students are given one week (4 days) to learn the application that they are assigned to. By Thursday of the week in question, they are expected to have a sample project to share with the class. On each Friday of the first quarter of the class, the students are asked to read a trade magazine article and then give a speech discussing the article's presentation of a technology innovation as well as their thoughts about the subject. During the second quarter, students are given time to work on the school's web page, updating what is necessary, securing permission for the addition of pictures of students, creating the next addition to the literary magazine on-line, and then they are given time to work on their term paper. The assignment is based on the predictions in the Daniel Burris book, *Technotrends*.

## Conclusion

The *Literary Desktop Publishing* class now being taught at other high schools in the district, as well as at RRS, offers students advanced experiences with complicated computer technologies. It meets district and state ELA standards, and it offers the language arts curriculum in an attractive package that the students actually like. The class proves that English skills and competencies can be taught by using something other than college-prep, literary material. The college-prep literature is taught in the other electives, but for the diverse population of RRS, it seemed important to offer a class with an "applied" approach. Enrollment in the class is high, and students are giving up study hall after study hall to "buy more time" on the machines. Future adaptations to the curriculum might include the construction of professional level advertising for the yearbook, construction of professional level advertising for the newspaper, and the addition of graphic arts projects for the school, whenever possible. The magic works.

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# Use of Telecollaboration to Develop Authentic Learning Experiences for Teacher Candidates

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**Abstract:** Participation in a telecollaborative project with K-12 students can provide authentic learning experiences for teacher candidates that connect theory with practice. This paper discusses how teacher candidates in a preservice teacher education class moderated a K-12 global telecollaborative writing project. As a result of the candidates' participation as moderators, the candidates gained an understanding of how to integrate technology into the classroom to achieve curricular objectives and became motivated to use technology in their own teaching.

The Redesign of Teacher Education in the state of Maryland as well as the new National Council for the Accreditation of Teacher Education (NCATE) 2000 standards include expectations for increased field experiences for teacher candidates. These organizations, along with educational reformers, believe that teacher education currently lacks sufficient connection with practice. (Lampert & Ball, 1998). Teacher candidates need to connect theory with practice and the consensus is that this is best done in the K-12 classroom. There are difficulties, however, associated with increasing the number and length of field experiences for teacher candidates. It is often difficult to find a sufficient quantity of placements in schools to accommodate methods students as well as student interns. Likewise, it is difficult to find quality placements with teachers who practice new approaches to teaching (Lampert & Ball, 1998). Finally, in education program coursework it is often difficult to discuss field experiences with students who may not share common field experiences. For this reason, many educators are using technology to bring the K-12 classroom to teacher candidates via electronic case studies, in which students examine videos of K-12 classroom instruction. Education, like business, law, and medicine, is realizing the benefits of a case method approach. Electronic cases allow students to examine, reflect, and discuss mutual observations in a time-independent manner (Bonk & King, 1998).

Another approach to creating authentic experiences that connect theory and practice is to use technology to take teacher candidates into K-12 classrooms. With the use of email, listservs, digital cameras, and the World Wide Web, candidates can converse with K-12 teachers and can mentor K-12 students, providing teacher candidates with teaching and learning opportunities without their ever leaving the higher education classroom.

As more and more K-12 schools have become wired for access to the Internet and as their teachers have become more familiar with email, the number of telecollaborative projects which bring together K-12 classrooms from around the world for collaborative study has greatly increased. Teachers are recognizing that telecollaboration is an effective way to create authentic learning experiences for K-12 students as well as increase their motivation. Numerous studies have documented the positive impact of participation in telecollaborative projects on student achievement (Allen & Thompson, 1994; Bagley & Hunter, 1995; Cohen & Riel, 1989; Petko, 1991). Harris (1998) categorized the wide variety of online projects, encouraging K-12 teachers to match classroom objectives with the appropriate type of online project. Web sites such as I*EARN (www.iearn.org), Lightspan's Global School House (www.lightspan.com), and Kidlink (www.kidlink.org/KIDPROJ) offer hundreds of collaborative online projects from which to choose.

## The Telecollaborative Study

This study used telecollaboration tools to connect teacher candidates, K-12 teachers, and K-12 students in a global writing project. The university students participated in the online project as moderators and in doing so learned about teaching writing as well as participating in telecollaborative projects. Activities such as the one in this study provide authentic learning experiences and teach candidates not only pedagogy but also technology

skills. The intent of integrating technology into the curriculum is to promote the acquisition of technology skills as a secondary rather than a primary instructional objective (Kent & McNergney, 1999). Using technology as a tool for accomplishing other classroom goals gives the technology a purpose. This study examined the use of teacher candidates to moderate a K-12 telecollaborative project. The study posed two questions:

1. Does participation in a telecollaborative project yield understandings on the part of teacher candidates concerning how to integrate technology into the classroom?
2. Does participation in a telecollaborative project result in high levels of motivation on the part of teacher candidates concerning integrating technology into teaching?

## Method

### Background

*Through Our Eyes* (TOE) is a telecollaborative writing project run annually on the Kidproj listserv and moderated by the author of this study. Its purpose is to involve K-12 students in the descriptive writing process. K-12 classes register to participate via an email registration that is distributed through various listservs and websites. In the project, K-12 classes choose a location in their area to describe, plan a field trip, complete pre-writing on location, and write collaboratively to create one final descriptive essay. Final essays are submitted to all participants via a listserv and posted on the TOE web site for all to see. The results of each year's project can be seen on the TOE web site (www.kidlink.org/kidproj/eyes00). During the Fall 1999 project, 28 classes from 7 countries participated in the project.

### Subjects

This study was conducted by the author in the capacity of instructor to nineteen teacher candidates in the EDUC 471 *Computers in Education* class at Salisbury State University. Some candidates in the class had not yet taken methods courses, while others had already completed their student teaching. Everyone, however, was a beginner in understanding how to integrate technology into teaching and learning. For the past four years, the instructor had moderated the TOE project, sharing the results with candidates as an example of a telecollaborative project. During the Fall 1999 semester, however, the instructor turned the project over to the candidates to moderate, guiding the students through the necessary steps.

### Data Collection and Analysis

Prior to the beginning of the course, the instructor posted the call for participation in the TOE project on two listservs and one web site and began to accept registrations. The project design, required activities, timeline, and web site were already established before the first day of the class. When the *Computers in Education* course began, each student in the university class was assigned two K-12 classes to monitor through the project. The candidates sent letters of introduction, announced assignments and due dates, monitored their assigned class' progress through the project, and responded to work submitted by K-12 students with praise and reflection. Communication was maintained through a listserv and email. In addition, all work was posted on web pages along with photos of participants and places for all to see. During the study, classroom discussions at the university identified concerns and techniques for communicating with K-12 participants and maintaining K-12 student enthusiasm for the project. In addition, the instructor monitored the messages sent from preservice moderators to their assigned K-12 schools as they appeared on the listserv. Teacher candidates maintained journals, documenting correspondence sent and received and their reflections on the project.

**Moderation of the project**

Whenever someone moderates a telecollaborative project, one of the primary objectives is to facilitate the project in such a way that all participants who register to participate go on to successfully complete the project. This is particularly important for the K-12 students who are registered for the project. It can be very disappointing for K-12 students to begin a project with classes from another country, build classroom enthusiasm, begin activities for sharing with participants, and then never hear from them again. While the instructor had been moderating the project for several years, there was some concern that candidates, who were themselves novices in use of technology, could not successfully maintain communication and encourage participants to remain throughout the four months of the project. However, the candidates moderated the project quite successfully. They embraced their roles as moderators and sent directions and encouragement along the way enabling their classes to complete the project. Several of the teacher candidates' comments appear below and serve to document their role as successful moderators of the TOE project. After teacher candidates and K-12 classes introduced themselves, the K-12 students were required to select a place to describe. Teacher candidate moderators sent messages to encourage them to select a place. One candidate wrote to a class in Italy:

> I was wondering if your class has chosen a site for your descriptive essay yet? Since I am of Italian heritage, I am very interested in learning more about Italy and your culture. Many of my family members have been to Italy and have told me how beautiful everything is. They have even shown me pictures of all the beautiful places and sites. I am very excited to find out what site you are going to write about. I look forward to hearing from you soon.

After selecting a place to describe, K-12 students were encouraged to take a field trip to the site for the purpose of completing prewriting activities. In reminding a class in North Dakota to share their prewriting, one candidate wrote:

> I was so happy to see your introduction on TOE this weekend. You sound as if you are very active in many different subjects. I look forward to reading about the place you have picked out for the project. Your prewriting on that place can be in the form of brainstorming a list of descriptive words, a paragraph, a few sentences to get your started, etc... I look forward to seeing your work on TOE soon.

Another student, also encouraging the class in Iowa to complete prewriting activities, wrote:

> It was great to hear from you guys. I've never seen a real prairie before so I can't wait to hear more details about your topic.... If you haven't taken time to go outdoors and write about the prairie you may want to. It's amazing what you notice when you sit there and focus on something more than usual. You may find more details about it you would want to include in your brainstorming and prewriting. Hope to hear from you soon.

Yet another candidate wrote to encourage students in New York to take a field trip to complete prewriting activities:

> You are all ahead of the game since you have a place picked out to describe. I'm sure the pizza place will be lots of fun to visit as a class and describe. Sometime this month you should visit the place and write a list of descriptive words, nouns, verbs and adjectives. I will be waiting to read your list. I have a feeling it will make me hungry. Remember to write if you have any questions. Have fun.

The teacher candidates saw their role as that of teacher and easily transformed that into email messages. They guided their assigned classes through the project enabling them to complete the project. Of the 36 K-12 classes initially registered to participate in the project, 28 remained in the project and submitted a final descriptive essay. When a school did drop out of the project, the university students were very disappointed and voiced their disappointment in their reflective journals. One student wrote:

> I was very disappointed that my class from Spain did not complete the project. They were off to such a wonderful start and then they just lost touch.

The candidates not only successfully moderated the project but also wanted more responsibility. Once K-12 classes registered for the project and were given the timetable for activities, there was not much to do as moderators except send weekly reminders of activities due (class introductions, location to describe, prewriting, final essay) and responses of encouragement for work sent. The candidates, however, wanted much larger roles as moderators and more opportunities for exchange of ideas. One student wrote:

> I was most interested in communicating with the students and teachers, which I didn't get to do enough. I realize that everyone is busy, but I would have liked to be a little more personal with my schools.

Along the same lines, another candidate wrote:

> The only thing that disappointed me was that my classes needed very little guidance. I was sort of hoping that I would have more communication with them, but I think that this was a false impression I had of what my job would be from the start. Overall I would love to do this again, and maybe when I start teaching in a year or so I could even participate in TOE.

## Findings

### Research Question #1

As a result of participating in the TOE project, these teacher candidates understood how to integrate technology into the classroom to accomplish a variety of curricular objectives in core content areas. This understanding was voiced in their reflective journals. One student wrote:

> *Through Our Eyes* is a great way to get students interested in writing, which is definitely hard to do in many classes. Descriptive writing can also prove to be challenging for many children, and this encourages descriptions of places and then using those descriptions to form an essay. A terrific way to put all the steps together is in this manner.

Another candidate wrote:

> I wish I had the opportunity to learn about places all around the world from telecollaboration rather than from a textbook. I know my learning would have been a lot more meaningful for me if I had the opportunity for telecollaboration in grade school.

Another teacher candidate wrote:

> The students benefit by using their critical thinking, cooperative, language and writing skills. They also see the world around them through the eyes of others. By sharing their vision with each other, each is given the opportunity to magically travel the globe to near and distant places. Places that were simply a picture in a book or a graphic on a web site suddenly come alive as if you were right there. The ability to learn from others is a benefit worth wonders.

Another candidate wrote:

> I would want to use a telecollaboration such as TOE because TOE can be used across the curriculum. In Math class the students could calculate how far away the collaborating schools are from our school, the ratio of boys to girls, or ratio of students to our students. In Science we may compare the collaborating schools' climate or landscape to our climate or landscape. In the Social Studies class I would discuss with my students the different events that have shaped the area where our participating school is located. I could also have my students plan a make believe trip to the area where our participating school is located. Finally, in English we could use our

> information to create a very descriptive essay. This is why I feel that telecollaboration can be used across a wide range of subject areas.

These candidates linked technology use in the classroom to achieving curricular objectives using constructivist approaches, demonstrating an understanding of how technology can be used in the classroom to support student achievement.

**Research Question #2:**

As a result of participating in the TOE project, teacher candidates expressed motivation to integrate technology into the classroom. The goal of including the TOE project in the *Computers in Education* course was not only to teach candidates how to use technology but also to motivate them to want to use technology. Fortunately, the teacher candidates' comments in their journals revealed a desire to participate in telecollaboration with their own classrooms. One candidate's comments are typical of those voiced by the class:

> I really enjoyed every aspect of this project. When I have my own class I will be sure to incorporate some use of telecommunication in the curriculum.

## Conclusions

From the success of the TOE project itself and the comments from teacher candidate moderators, it is clear that candidates benefit from moderating a telecollaborative project. The results of the TOE project can be seen on the project web site, which includes K-12 participant introductions, pre-writing, final essays, and numerous graphics of K-12 students on location. Participation in the TOE project immersed the candidates in an authentic project and provided them with first hand experiences, which integrated technology into the classroom. This experience enabled them to develop an understanding of how technology can be integrated into the curriculum to accomplish curricular objectives. Finally, the experience left the candidates wanting a more active role in the project and fostered motivation to use technology in their own future classrooms. These teacher candidates are likely to be tomorrow's K-12 teacher participants in telecollaborative projects.

## Implications for Practice

The purpose of this study was not only to determine if teacher candidates benefit from moderating a telecollaborative project but also to provide guidance for those who may be interested in trying telecollaboration. In their journals and in classroom discussion of the project, candidates offered a number of observations about ways to improve the telecollaborative experience. The following suggestions discuss the practical implications of the study.

First, teacher candidates seek a greater role as moderators. For the purposes of this project, which provides four months for the participants to complete the project, it is important that the participants be registered to participate prior to the beginning of class. For shorter projects, the instructor could allow the candidates to be involved in designing the project and announcing the project on several lists.

Second, the candidates need guidance concerning their roles as moderators. Initial discussion should occur regarding the tone of messages sent and instructors are advised to read correspondence prior to being sent to K-12 classes. In reading one student's journal which included messages sent, it was discovered that the student seemed to be reprimanding a teacher for being tardy in submitting assignments. Needless to say, the teacher dropped out of the project.

Next, moderators need a way to track progress of their assigned schools. This can be accomplished in several ways. First, to keep everyone in the communication loop, subscribe all participants and moderators to a listserv. There are several free services available on the web. One that has been used successfully at Salisbury State University is Nicenet (www.nicenet.org) Next, provide student moderators with a list of activities that K-

12 schools need to accomplish. Then create a table so that the preservice moderators check off each activity as their assigned schools complete it. This will facilitate class discussion regarding where all schools are in the project.

Finally, the instructor needs to maintain contact with the K-12 teachers to discuss their needs and the success of student moderators.

## Suggestions for Further Research

Schools of teacher education are encouraged to explore the use of telecollaboration as a way to provide teacher candidates with authentic field experiences. While this study has explored the possibility of using telecollaboration, other researchers will hopefully identify additional ways to allow candidates to be even more involved in the design and implementation of telecollaborative projects. Further research could explore the impact of this tool in the higher education classroom.

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# Getting Real in TESP: Operational Technologies at Business English Classes

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A theory must be tempered with reality.
JAWAHARLAL NEHRU

... Education is life itself.
JOHN DEWEY

**Abstract:**

## Introduction

In the age of information, a university graduate has to be competent not only in his major field. The world business community, traditionally communicating in English as *lingua franca* and well advanced in using modern technologies to manipulate relevant information, requires both language proficiency and technology skills as mandatory for a business executive from outside the English-speaking world. This implies the broad-scale integration of modern information technologies in all courses of any university program. ESP (English for Specific Purposes) courses should, therefore, be based on the wide use of language-learning technologies as well as operational software employed in the field. Using the English-based operational software at Business English classes is the efficient way to develop the students' command of the language as well as that of technology, thus raising the quality of higher education.

The paper presents the basic ideas for integrating operational technology in the Business English course and discusses the necessary competencies of an ESP (English for Specific Purposes) practitioner.

## Content-based ESP Teaching and Technology in ESP Courses

### Content-based ESP Teaching and Specific Competencies of an ESP Practitioner

Apart from the language-based approach in Teaching English for Specific Purposes (TESP), the content-based approach (Dudley-Evans & StJohn 1998) has been widely spread. It appears to be more efficient than the language-based approach: instead of dismembering the language structure for no obvious reason, students are encouraged and motivated to use the language for manipulating professionally valid and valuable information. Thus, the conditions are produced for engaging students in " in experiencing, creating, and solving real problems" (Lieberman 1995), motivating the use of professionally oriented language which is vital for its internalization (Berryman & Bailey 1992; Zahorik 1995)

Obviously, content-based TESP requires that an ESP practitioner have some specific competencies. These include the knowledge of the specialty basics (Master 1997), specific language, and field routine: "...Text comprehension, a necessary precondition for the use of the text in the LSP [Language for Specific Purposes – *T.S.*] classroom,.. is facilitated by specialist knowledge and hindered by its absence" (Ferguson 1997). The field routine includes also the information technologies involved in handling information. Thus, an ESP instructor has to know, among other things, what technologies are used in the profession taught to his/her students. The use of operational technologies for professionally relevant problem solving offers the unlimited reserves for better ESP courses and, finally, quality education on the university level.

### Technology in ESP Courses

P.Delcloque (1997) pointed out that foreign language teaching had always been on the forefront of using technologies. Ironically, as technologies become more sophisticated, they are less used in language teaching (op. cit.) - partly on the account of their inaccessibility, but mostly because of ESP practitioners' *technofear* (op. cit.) and their lack of specific competencies: having no idea of the specialty basics, they can - and are not scared to - use only the simplest of educational technologies (e.g., computer drills). Only a few technologically advanced instructors use multimedia in their language courses.

However, there is another class of technologies used in specialist training and thus considered educational. If instructional technologies are used for language learning facilitation, operational technologies, employed for information handling in the field, should be involved in ESP courses on the stage of communication practice. Their enormous educational potential is completely ignored by the Humanities faculty, though, if creatively used, they can significantly add up to instructional technologies' educational impact.

**Operational Technologies in Business English Courses**

Operational technologies can be integrated in Business English courses as the tools for manipulating professionally relevant information (obtaining, organizing, generating, and disseminating various data) that serves as the information base of further communication. "Requiring the learner to generate materials is a powerful technique" (Hammond 1989); using the learner-generated materials for further communication is another successful practice for facilitating language acquisition. This provides learners with the information to communicate and motivates the communication that helps internalize the knowledge of the language structure (*declarative knowledge*) and the skills of using it in professional settings (*procedural knowledge*).

The integration of operational technologies into Business English (BE) courses implies the use of software and hardware utilized in the business realm for solving professional problems. The software used can be classified as document-makers, information managers, information sources, presentations, and communication programs. The first include business card makers, business planners, marketing campaign builders, resume makers, etc. Information managers are the tools for manipulating various types of information; they comprise daily organizers, financial managers, project managers, etc. Finally, on top of the Internet, there are such information sources as small business packs, Incorporate™, Infobusiness Information USA & Government Giveways™, and others. Business presentations in the format of computer slide shows are made with Microsoft PowerPoint™ or Corel Presentations™; this group also embraces Web page makers. Communication software includes e-mail, listserv, electronic billboards, etc. The types of operational technologies to be used in Business English courses are presented on Fig. 1:

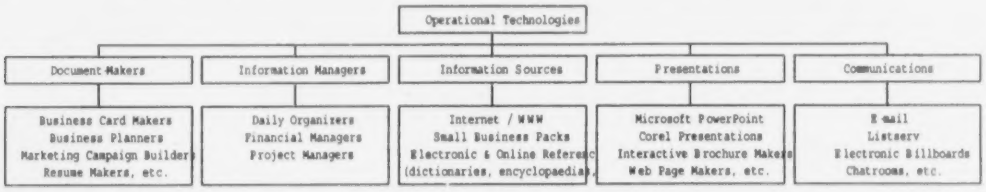


**Figure 1.** Operational technologies in Business English courses.

Integrated into Business English courses, operational software is used in class as well as out of class, e.g. for students' projects and for preparing materials and handouts for role play, thus making the courses, in general, more functional and the classes, in particular, more authentic. "Requiring the learner to generate materials is a powerful technique" (Hammond 1989); using the learner-generated materials for further communication is another successful practice for facilitating language acquisition. This provides learners with the information to communicate and motivates the communication that helps internalize the knowledge of the language structure (*declarative knowledge*) and the skills of using it in professional settings (*procedural knowledge*).

Office equipment can also be integrated in BE courses for modeling business communication. It includes the tools for processing and multiplying documents to be used as handouts as well as the means of communication, e.g. telephone, fax machine, and modem. In some cases, video and audio can be involved in preparing presentations as well as multimedia.

In the original ESP course developed by the author for students of Economics, Management, and Finance at Northern International University, modern technologies are used as the integral part of the program:

| Educational Technologies | Software | Purpose |
|---|---|---|
| Instructional technologies | Computer language drills | Language structure learning facilitation |
| | Computer slide presentations | New language material presentation |
| | Audio | Discourse model presentation |
| | Video | Communication model presentation |
| | Language-learning multimedia | Situational language acquisition facilitation |
| Operational technologies | Computer slide presentations | Professionally relevant information presentation<br>Students' presentations |
| | Document makers | Handout preparation<br>Information dissemination<br>Assessment |
| | Sources of information | Informational background for students' presentations and role play |
| | Communications | Information dissemination<br>Discussions<br>Assessment |
| | Information managers | Handout preparation<br>Informational background for role play |

**Table 1.** Educational Technologies at ESP classes.

This broad use of various technologies in the BE course not only improves the classes, bringing them closer to life, but also requires some specific skills from the ESP instructor.

### Course-specified Competencies of a Business English Instructor

On top of the general competencies that include the language command, the knowledge of teaching methodology, cross-cultural techniques, the skills of classroom management (Johnstone 1997; Master 1997), and educational technologies, an ESP practitioner delivering a particular course, e.g. Business English, has to develop some specific competencies, based on the knowledge which is necessary for successfully arranging and managing classes in the professionally situated discourse. Educators (e.g. Ferguson 1997) define this knowledge as specialist knowledge, or «knowledge of the subject matter or profession of the students taught» (op. cit.).

However, this definition is not complete because it implies only the declarative part of specialist knowledge, completely ignoring its procedural part. The latter includes the routines of the profession and tools/technologies used for solving professional problems. So the course-specified competencies of an ESP practitioner comprise not only the basics of the specialty theory, but also their practical implementation through the use of operational technologies. Therefore, a Business English instructor should be competent in both business basics and technologies used in everyday business practice. Only then he/she can be reasonable and responsible in selecting the operational technologies to supplement his/her course and make it professionally relevant.

## Operational Technologies in ESP Courses: Implementation Experiences

The framework used for successful implementation of operational technologies in professionally oriented language courses is presented below:

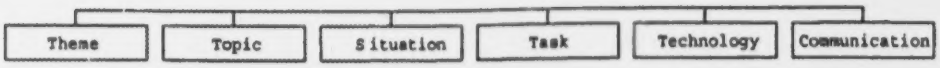


**Figure 2.** Operational technologies in Business English: implementation framework.

Starting with some basics ("Basic Business Concepts, " "All About Companies," etc.), the author's Business English course is structured according to five principal activities within the sphere of business:

1. Management
2. Marketing
3. Accounting
4. Finance
5. Computer and Data Processing.

Each theme comprises several topics, including various situations that are typical for professionally set communication. Considering the formats of information presented as the communication base, the instructor selects the technologies that facilitate manipulating this information. For instance, the "All About Companies" unit includes such topics as:

1. Company structure
2. Company profile
3. Jobs and responsibilities
4. Company hierarchy
5. Formal introductions, etc.

Considering the most typical situations and developing relevant tasks, the instructor comes to the following:

| Topic | Situation | Task | Software |
|---|---|---|---|
| Company structure | Telling a new employee about the company | Compile the organization chart presenting the company structure / the board | Corel WordPerfect™<br>Microsoft Office™<br>Microsoft Organization Chart™ |
| Company profile | Company presentation at an international business conference | Produce a computer slide presentation about the company | Corel Presentations™<br>Microsoft PowerPoint™ |
| Jobs and responsibilities; company hierarchy | Recruiting new employees | Compile a *Wanted* ad | Corel WordPerfect™<br>Microsoft Office™<br>Adobe PageMaker™ |
| | Job interview | Generate a job application form<br>Generate a job interview questionnaire<br>Write a resume | Corel WordPerfect™<br>Microsoft Office™<br>Adobe PageMaker™<br>ResuMail It!™ |
| Formal introductions | Meeting a business partner<br>Meeting people at an international business conference | Prepare a business card | Corel WordPerfect™<br>Various business card makers |

**Table 2.** Technology-enhanced Business English course: contents and operational technologies.

This framework, based on the Six T's approach (see Master 1997), helps integrate renowned technologies and technological innovations on any stage of any ESP course.

## Conclusion

Integrating operational technologies into Business English courses is best performed through using the Six T's approach postulated by Stoller and Grabe (Master 1997). It implies structuring the course content from themes and topics

to communicative situations and tasks as the assignments to be done by students. These should apparently include the seventh T - technology, both instructional and operational. The use of operational technology in BE courses would make them more authentic and successful and, finally, would help improve the quality of higher education, in general, which is vital in the age of information.

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# Movies in English for Specific Purposes: From Entertainment to Excellence

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**Abstract:**

The quality education today is associated with the operational command of English as the vehicular language of the world business community. Successful teaching English for Specific Purposes (ESP) involves the use of technology-enhanced language-learning materials that present the authentic model of discourse as well as its genuine professionally determined background. Video as inexpensive and widely spread presentation technology has both advantages and drawbacks; an ESP practitioner has to employ the former so that they compensate the latter . The paper introduces an original video-based ESP material and the framework for its implementation in a university-level Business English course.

## Introduction

Being instrumental within the global business community, English has become an integral part of quality education in the post-industrial society. In the format of English for Specific Purposes (ESP), it has taken a firm position in the university curricula outside the English-speaking world: «...Throughout the world there are similar trends towards increasing academic and professional stability and expanding markets, with the consequent need for specialized language skills» (Howard & Brown 1997). Consequently, «Special-purpose courses geared towards students' professional interests have become popular» (Scinicariello 1997). However, the ESP practitioners encounter the problem of teaching/learning materials scarcity or imperfection: the materials available either do not meet the needs of a specific ESP course or appear too general for it and thus can be used in fragments only on the early stages of specialized language learning. The observed trend to the greater variety of ESP courses is followed by their greater specialization. So, what we need today is the set of linguistically authentic, professionally relevant ESP course materials with the enormous matemagenic (Rothkopf 1979; Laurillard 1993) potential, to be used in class and in self-studies.

The increasing demand for constructivist ESP-learning materials, both informative and motivating, has only been partly satisfied. Obviously, the technology-based learning materials used in teaching Business English are rather scarce and limited to a few computer programs on top of numerous audio and several video courses. This reflects the troublesome tendency in teaching English as a Second Language in general, pointed out by P.Delcloque (1997): "Linguists... have made full use of audio, little use of video, and have been very slow to adapt to the computer revolution."

Thus, only a small portion of the immense potential of video has been employed in language learning. The paper presents the work that aims in increasing the use of video in TESL/TESP and is an example of incorporating video materials in Business English university-level courses.

## Video in TESP

Whatever a course is, technology is engaged in language learning to serve the general purpose of raising the language learning quality. The reasonable and well-grounded use of technology on the constant basis enhances the cognitive power of the course. However, it is vital to realize that «it is not the technology itself but rather the way in which teachers use the technology that has the potential to change education» (Carr et al. 1998).

Considered basically as a presentation technology modeling the language discourse (Dudley-Evans & StJohn 1998), video presents the language use patterns as well as the genuine communication background. Its undoubtful advantages are its affordability and accessibility: there hardly is a school where a video class would be impossible. Besides, video allows multiple repetitions of the presentation in a user-friendly mode, which also adds to its educational value, as well as its self-studying capacity. However, in terms of ESP teaching, it suffers several major drawbacks, such

as weak feedback, which certainly has to be compensated by the teacher in class.

According to M.Bush (1997), when trying to implement any technologically enhanced material in language teaching and learning, an ESP practitioner should consider the language model used in it, and develop the appropriate instructional design and system implementation strategies. In an ESP course based on the 'technology-as-a-supplement' model, the instructor has to consider both real and carrying content (Dudley-Evans & StJohn 1998), i.e. the language used and professionally valid context, presented in videos.

In the specially prepared language-learning video courses, the language used is carefully selected and to some extent simplified; therefore, the discourse presented there is but a blueprint of real-life communication. This makes it applicable on the primary stage of the learning process, as an introduction of the language material and a model of its use. Mastering the language command with time, students gradually come to need more authentic examples, containing more sophisticated language, and more life-like communicative situations. These can be found in movies.

## Movies in TESP

As a source of the real-life discourse, movies are characterized by the authenticity of discourse and communication background. However, the general fault of all video materials, their weakened feedback, requires the additional efforts from the instructor aimed in stimulating the students' cognition and in motivating communication in class. The format of video implementation is of primary importance here.

In ESP courses, such as Business English, movies can be used in the following formats:

1) complete movie presentation (e.g., *Take A Letter, Darling* and *Wall Street)* with the proper introduction and feedback
2) movie fragment (e.g. job interview in *The Firm)*, actively elaborated at the class
3) original video program, containing several movie fragments, comments, and feedback, and
4) a part of language-learning multimedia software, supplied with interactive assignments.

The first two formats are no news for an ESP practitioner and have been widely used, though the fault of the complete movie presentation is the feedback limited to classroom discussions and essay writing. The second two are less common because they involve more creativity, time, and technological competence from a teacher. However, when developed by a practicing educator in the context of a certain ESP course, they may be more successful than the renowned professionally prepared language-learning materials.

When producing an original language-learning movie-based video program, the instructor has to keep in mind the following faults of video as a teaching aid:

1) technically complicated and time-consuming revisions of the fragment;
2) background noises, e.g. city transport in the street, etc.
3) zero interactivity of the material.

Considering these drawbacks realistically, the ESP practitioner has to find a counterbalance for each. To waste no time for rewinding in class, he/she should copy the clip on the same cassette as many times as it is implied by the lesson format. Careful selection of episodes practically eliminates the background noise interference which can also be reduced technically or, much easier, through the use of the printed script in the workbook. But the zero interactivity problem appears the most difficult because it requires specifically designed language-learning materials; otherwise it takes a lot of creativity, time, and effort from the instructor to compensate it.

Each unit of professionally developed video courses contains the special feedback section. For instance, in the world-renowned *Family Album, U.S.A.* video course, an Activities section closes each of the three acts making an episode. However, the tasks offered are hardly interactive in terms of language learning, where interactivity implies the collaboration between the communicants and the context of situation. «Students achieve facility in *using* a language when their attention is focused on conveying and receiving authentic messages (that is, messages that contain information of interest to speaker and listener in a situation of importance to both). That is *interaction*...» (Rivers 1987). When using a movie as a basic discourse pattern for an ESL/ESP class, the instructor has to arrange the interaction part.

So, a quality video-based language–learning material would *be linguistically and culturally authentic, informative, motivating*, and *interactive*. Movies present the real-life communication in genuine settings; they supply language learners with valuable and veritable information on language and culture; they are intrinsically motivating because of the intricate; and, like any video they possess the zero interactivity potential. This determines the need to involve additional technologies that can provide the needed interactivity. One of these technologies is multimedia that combines the video and audio input with interactive feedback.

## *Mergers and Acquisitions*: Video-based Business English Materials

The original video-based materials developed by the author for her Business English course taught at the Northern International University include:

1) the *Mergers and Acquisitions* video program
2) a corresponding module of the *Wiser Educator*™ multimedia software.

The *Mergers and Acquisitions* video program is based on seven fragments of the 1987 20th Century Fox movie, *The Working Girl*. The fragments present an acquisition project from the idea to the completion and thus go with Unit 2 («Forms of Business Organization») of the content-based Business English course. Each fragment has been preceded with the video introduction, including comments on language and culture. The program was compiled and edited by the author with the use of the *Avid Cinema*™ video editing software and is used as the *presentation* of both real (language) and carrying (professionally determined communication context) content.

The *Mergers and Acquisitions* multimedia module has been produced on the author's platform of the *Wiser Educator*™ multimedia authoring software, which allows to import video and audio clips and smart-link them with the text. It also helps generate exercises in five basic formats, thus providing multiple repetitions and revisions of each clip. The module is designed as the *additional language training set*.

### The *Mergers and Acquisitions* Video

The *Mergers and Acquisitions* program is supplied with the workbook that, on top of the video fragment scripts and comments, contains the extensive reading material and assignments, thus providing the necessary feedback which has always been the Achilles' heel of any language-learning video course.

The workbook is opened with the Introductory Reading that contains the basic information about mergers and acquisitions in business. It is followed by seven units, each presenting an episode in the strictly observed format, including the episode script, comments, and several stages of elaboration.

After the Preparation that implies reading and discussing the episode script and comments, each episode is supposed to be presented several times. First comes the Preview aiming in the general understanding of the situation; it is checked by questions about it. Next, the students move on to the View stage: they watch the movie fragment again and fill in the blanks in the script. After the Review, they have to do some writing assignments (prepare either reviews or essays on the given topics). Finally comes the Interaction, including role play and presentations. An important feature of this part of the unit is the outreach that implies the search for additional information to be used in role play and students' presentations.

The workbook is completed with the Summing Up unit built around two groups of issues, Language and Business: while Language Issues aim in checking the mastery of the language material, both general and specific, Business Issues comprise more presentations, information search, and projects based on the material learned.

### The *Mergers and Acquisitions* Multimedia

The multimedia module is based on the same episodes and the *Wiser Educator*™ authoring system that allows compile five types of activities:

1) Matching, that implies finding the text of the phrase presented in a video fragment;
2) Sequencing, i.e. arranging the sentences in the correct order of the dialog presented in the video clip;
3) Gap Filling, that checks the knowledge of the unit vocabulary through filling the gaps in the text of the dialog;
4) True or False, testing the student's knowledge of the whole situation; and
5) Multiple Choice, used to estimate the student's knowledge of the communication background details, e.g. business etiquette, etc.

The smart-linking technique ties each of the activities with the video episode fragments. The activities allow develop both real (language) and carrying (professional) content. Since they do not coincide with those submitted in the video workbook, this module can be used independently as well as in the format of a training supplement to the video

program.

**Software Selection**

Software selection was based on the following qualities of the former:

1) its *relevance to the task and material format*. An ESP practitioner has to develop an accurate idea of the material he/she is planning to design. A movie-based language-learning program based on the theory of constructivism implies multiple presentations of the discourse patterns on the video, accomplished through several stages of watching the video and practicing the language structures, and extensive interaction, including role playing and various projects completed by students;
2) its *user-friendliness*, which is one of the most important technology characteristics for Humanities faculty, with their comparatively low level of technological proficiency and even *technofear* (Delcloque 1977). The author had a terrifying experience with several professional multimedia authoring systems and found that the *Wiser Educator*™ is surprisingly easy to use;
3) its *time- and effort-saving capacity* directly results from user-friendliness. It is vitally important for instructors involved with, so to speak, condensed courses that comprise long and frequent classes (e.g. intensive ESP programs).

| Software | Type | Tasks Accomplished |
|---|---|---|
| *Avid Cinema*™ | Video editing software | • copying movie fragments to the computer hard disk as **.mov* files<br>• editing them to one minute of length, according to the copyright regulations<br>• putting together the video program episodes<br>• producing titles and effects<br>• copying the program on the videocassette |
| *Wiser Educator*™ | Multimedia authoring system | • inserting **.mov* files into learning modules<br>• inserting the script<br>• smart-linking movie fragments with their scripts<br>• preparing exercises<br>• smart-linking parts of each episode |

**Table 1.** *Mergers and Acquisitions:* software used for production.

**Framework for Implementation**

The *Mergers and Acquisitions* program is designed as the supplement to the corresponding unit of the Business English course. As such, it can be employed in parts as successfully as in the whole. In any case, the work starts with the Introductory Reading section to be completed before the first video presentation class. Practice shows that the most successful classes are conducted in the mixed format (general video presentation of each episode followed by its individual multimedia elaboration and completed with the interaction). Thus, the multimedia has to be included in the video presentation between the Preview and View stages. This significantly increases the number of motivated multiple revisions of each episode, which adds up to the successful accommodation of the language and background information. Thus, the acquisition of the professionally valuable language content and the cultural component of the discourse occurs within the constructivist paradigm that implies active learning, encouragement of deeper understanding through multiple responses to the unfamiliar stimuli, and learning in context (Berryman & Bailey 1992).

## Movies in Business English: Entertainment in Education or Education in Entertainment?

The use of movies in ESP classes differs significantly from that of language-learning videos. Sharing such

characteristics as the enforced discourse presentation due to combining video with sound and the weak feedback, movies, however, are noted for their greater motivating capacity and emotional appeal. Successful integration of movies in ESP, e.g. Business English, courses requires that the instructor assess realistically all their technological advantages and drawbacks as well as the learning potential.

| Characteristics | Language-Learning Video (LLV) | Specially Selected Movie (SSM) | Implications for ESP Practitioners |
|---|---|---|---|
| Real (language) content | Extremely simplified, basically neutral, and generalized | True-to-life, emotionally expressive, and situation-specific | LLV is to be used on the lower stages of ESP courses than SSM |
| Carrying (cultural and professional) content | Generalized | Comprehensively presented both in discourse and communication background | Activities based on SSM cultural and professional context should be included into interaction |
| Motivation capacity | Extrinsic motivation: "*I have to*" | Intrinsic motivation: "*It's interesting*" | In LLV feedback activities have to be intrinsically motivating |
| Interactivity | Zero (feedback provided through the course workbook activities) | Zero (feedback to the instructor's discretion) | SSM-based ESP classes should include an extensive set of interactions |

**Table 2.** Language-learning video vs. specially selected movies in TESP

The creative use of movies for knowledge construction in ESP courses is one way to realize the idea of easy, relaxed learning (Kitaygorodskaya 1986) that is known to facilitate language acquisition A recently coined term, *edutainment*, finds another meaning here: this is not just learning with fun, it is using the educational potential of entertainment.

## Conclusion

The language and background potential contained in some movies can be successfully used in ESP teaching and learning. An ESP practitioner can easily develop original audio and video programs as well as the multimedia learning modules that are highly authentic and close to his/her course. The synthesis of video and multimedia classes has proved highly successful at advanced Business English classes based on the authentic linguistic and extra-linguistic information presented in some movies. The author plans to continue the project, adding more interactive video programs and multimedia modules.

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# Technology, Language Arts, and Teacher Preparation: Stacking the Odds of Classroom Use

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**Abstract: This paper presents the results of a university project funded by a Rural Integration of Technology in Education Grant from the U.S. Dept. of Education. The project, entitled "Tech Bridging for Literacy Development", involved collaborative use of communication technology across five sites involving preservice teachers, elementary pupils and university teaching methods faculty. Feedback results from participant groups indicated positive benefit from the project with regard to extended computer competencies and an increased likelihood of using technology in future classroom instruction. The preliminary findings support the perceived benefit of change efforts aimed at simultaneous involvement of multiple constituents in the infusion of technology-enhanced instruction. The report concludes with several recommendations aimed at overcoming some of the difficulties inherent in multi-site technology collaboration.**

## Introduction

During the past decade, universities have been repeatedly criticized for failing to equip future teachers to implement technology enhanced instruction. In particular, the 1993 report from the Office of Technology Assessment stated, "...Teacher education students are exposed to very few educators who use technology as a teaching tool in their preservice program and see very little technology use in their student teaching placements." (p. 4). Continuing study of classroom teachers in the 90s has confirmed that teachers are using computers far more frequently for administrative functions than for purposes associated with instruction (McCannon & Crews, 2000). As we turn the corner of the new century, a new sense of urgency for infusing technology into teacher education has been created, driven largely by competition and impending standards from professional accreditation organizations (Rogers, 2000).

Given the calls for change, it would appear that higher education personnel involved in teacher preparation need to simultaneously answer questions concerning two different components of preparedness: a) How can we increase the instruction-related technological capabilities of future teachers, and b) How can we change future teachers' plans for incorporating technology in their classrooms? This paper reports on the implementation and results of a project intended to address both questions.

## Description of the project

During the spring of 2000, preservice teachers in reading and language arts methods courses at Winona State University participated in a semester-long project aimed at showcasing technology infusion possibilities for elementary language arts classrooms. The project, titled Tech Bridging for Literacy Development, sought to model two different approaches to classroom technology use, both of which allow teachers to sustain interactive communication around explorations of children's literature.

The first phase of the project involved preservice teachers from Winona State University and two other universities in the collaborative building of an interactive children's literature web site. Each preservice teacher enrolled in selected language arts methods courses at the universities read and reviewed a book from each of five different genres for the intermediate elementary grades (4-8). After creating the reviews in basic word processing software and utilizing spell checking tools, the preservice teachers were told to open a web-based version of File Maker Pro and search for the reviewed title. Students then made a new entry or continued an existing entry as they copied their reviews into the database.

The general structure of the reviews was prescribed to include the fulfillment of expectations, comments on author craft, and perceived connections to other books. Each review ended with a question for subsequent reviewers of the book.

The second phase of the project involved WSU preservice teachers in creating and sustaining a literacy conversation centered around a children's novel and carried on through a series of email exchanges with distant fifth grade partners. Students from WSU were partnered with students from two different elementary classrooms, one from a very diverse metropolitan area, and one from a rural town, population 2300.

## Implementation: Anticipated and Realized Difficulties

The design of the project anticipated difficulties with coordination between the three university faculty as each person attempted to implement the project in different locales with varying technology access, varying computer platforms and applications. Voice and email conversations in the weeks prior to the project were scheduled to talk through foreseen difficulties. Similar early contact with elementary instructors attempted to address planning and computer access issues. At launch day, all parties appeared to have worked out logistics for initiation of the project.

Phase One, the database project, was initiated with WSU students by introducing the WSU students to a sample review along with modeled oral and written directions for accessing the database in the education computer lab. The first review of children's literature was assigned to be completed by February 15. Following instructor feedback on the initial review, students were given the rest of the semester to complete the remaining three reviews for the project, with a suggestion that they pace their reviews equally across the semester in roughly two to three week intervals. All students completed the required total of four reviews.

Unexpected difficulties arose in the intended collaboration between universities. Instructors from similar methods courses at a private institution in Minnesota and at a state institution in Georgia had agreed to have their students join the WSU students online in the collaborative development of the children's literature database. Repeated technology difficulties arose at the Georgia institution and scheduling issues made it difficult to anticipate participation from the private university in Minnesota. Although follow-up phone calls and email to Georgia were received positively, participation by the Georgia students was not apparent in the database by semester's end. In spite of this, the instructor did indicate interest in pursuing the project in the upcoming school year. Although the private university students from Minnesota did not providing identification coding, based upon a noticeably different structure in the reviews it was estimated that they made approximately 23 entries to the collaborative database. Project evaluation forms were not returned from either institution.

Phase Two, the literacy letter exchange was scheduled to coincide with an on-campus visit by one of the two fifth grade classes. The students from the metropolitan elementary made the 110-mile trip to visit the WSU campus in April 2000. In order to establish a leading relationship, the email exchange was scheduled to take place the two weeks prior to their arrival. The same email schedule was used to establish the email exchange with students from the rural elementary in hopes that they also would be able to make an on-campus visit. This proved to be an unfounded assumption as the field trip of 20 miles was subsequently denied. Nonetheless, the classroom teachers and the university instructor had agreed upon stopping points within the novels being read, and asked students to read up to a given stopping point by the date of each of the three email exchanges.

Difficulties arose almost immediately with the commencement of the first email exchange. Classes at the metropolitan school had never used email before. However, the media specialist there set up Hot Mail accounts for each student. However, after each scheduled email exchange, the WSU instructor typically received five to eight reports of problems where students had either not gotten email or had not responded back before time for the next exchange. The situation was complicated by the inability of the WSU instructor to schedule class time into the computer lab so that all emails would be sent at a given point in time. Also, the lab time at the metropolitan elementary was scheduled earlier in the day than the WSU course. Thus sometimes messages from WSU were sent on a specified day, but elementary students had already left the lab and could not return until their schedule permitted later in the following week.

Initial correspondence with the rural elementary also met with confusion. Students at the rural elementary had completed a computer unit earlier in the year and already had Hot Mail accounts established, so their teacher assumed that everything was in place. Upon the initiation of the email exchange from WSU however, it was discovered that several St. Charles students had been "kicked off" their Hot mail accounts because they had not been using them regularly. This led to delays in responses to emails as well. Eventually, the WSU college instructor tired of serving as the central clearinghouse for complaints and provided emails for all participants to the college students and classroom teachers. This appeared to help resolve issues more quickly, although a few students continued to report difficulty establishing and maintaining contact.

College students were asked to submit a printed copy of their email exchanges for instructor review. All college students completed at least three email messages by the end of the planned time. A culminating activity was planned for the face-to-face meeting with the students. College students were placed into groups of three or four, and were asked to design a game board using the theme of the shared novel. Students then developed questions at three different levels of comprehension and used the questions as question cards in the playing of the game. The games provided a comfortable structure for interaction when the students from the metropolitan elementary came to meet their key pal on campus. The group working with the rural elementary ended their exchange with a final email telling the students that their games were going to be delivered to the school for the fifth graders to use in class time.

## Results of Phase I: Collaborative Database

Both projects were completed by May 1, 2000. At the conclusion of the database project, WSU students were asked to complete a one-page project evaluation form, which incorporated both Likert scale items and open ended sentence completion items.

The Likert Scale items asked students to respond to four statements: a) I think the database project is more enjoyable than index card reviews of children's literature for future teachers, b) I think the database project is more effective than index card reviews of children's literature for future teachers, c) This project extended my ability to use technology, and d) This project increased the likelihood that I would consider using technology in my classroom in the future. Data collection for the database phase of the project resulted in eight sets of usable preservice teacher feedback data from WSU students. This report will focus on the data sets from preservice teachers.

From the Likert Scale items, a majority of students reported that the database project was more enjoyable (87% agree or strongly agree) and that the database project was more effective than traditional index card reviews of children's literature (87% agree or strongly agree). A majority indicated that the project had extended their ability to use technology (75% agree), while 100% of the respondents felt the project increased the likelihood of using technology in their classroom in the future (12% strongly agree; 88% agree). The latter finding goes directly to a guiding question for the project: Can technology-based projects in preservice literacy methods change future teachers' plans for incorporating technology in their classrooms? The limited results of this project would indicate a positive answer to this question.

From the sentence completion portion of the project evaluation, it appears that students felt the project developed their capability for teaching by its focus on different genres of children's literature, and appreciated it most for providing access to their peers' reviews of books. The aspects of the project that students appreciated least were clustered around issues with technology. However student suggestions for refinement of the project were decidedly not technology improvements, but rather a variety of shifts in directions, genres, and sharing of reviews.

## Results of Phase II: Email

Similar to the database project, students were asked to complete a one-page project evaluation form, which incorporated both Likert scale items and open ended sentence completion items. Data collection for the email phase of the project resulted in forty-seven sets of usable elementary student feedback data, two sets of usable elementary teacher feedback data, and sixteen sets of usable preservice teacher feedback data from WSU students. This report will focus on the data sets from preservice teachers.

Similar to the database project, Likert Scale items indicated strong support for the project in general. Students were in general agreement that the email project was more enjoyable than traditional index card reviews of children's literature (88% agreed or strongly agreed). A similar majority felt that the project extended their capability to engage in informal but meaningful book talks. The group split evenly over whether the project extended their ability to use technology (50% disagreed or strongly disagreed). It was somewhat surprising to the author that 50% of the students thought it did extend their tech capability, given that the email technology under consideration is relatively common at the university level.

As in the database evaluation, the last item went directly to the guiding question for the project: Can technology-based projects in preservice literacy methods change future teachers' plans for incorporating technology in their classrooms? Once again, the responses were strongly affirmative (100% of students agreeing or strongly agreeing).

When students were asked what they appreciated most about the project in the sentence completion portion of the project evaluation, students felt the project developed their capability for teaching: the project focus on informal interaction and understanding of elementary student views as well as realistic technology utilization. When asked about the aspect of the project they least appreciated, several students stated they had no problems with the project. However, others indicated concern that the email was too structured both in terms of a given number of exchanges and the content of the exchanges. Student suggestions for refinement of the project focussed on procedural improvements to ensure that students had more regular and frequent exchanges.

## Conclusion & Recommendations

Any results or conclusions drawn from the two-phase project should be considered as tentative at this point. The difficulties with technology access, the constrained timeline for email exchange, the less than full participation of collaborating institutions, and the limitations of the data gathering system employed would each need to be addressed

before drawing firm conclusions from such a study. Nonetheless there are possible insights to be gained from the project's implementation and findings.

Insights and recommendations from the implementation of the database project are threefold. First, future projects might explore providing extended time for "silent mentoring" of would-be instructor participants. The time necessary for mentoring would allow the technical issues to be addressed prior to beginning the project. Secondly, it is recommended that future project investigate the establishment of a "scouting team" of would-be college student collaborators. The scouting team would allow clarification of project requirements and create on-site champions of the project to encourage subsequent participants in the project. Finally, it is recommended that project originators gain advance agreements from would-be college instructor participants. Such agreements would involve a commitment to joint ownership of the completion of the project as well as completion and return of project evaluation forms.

Several specific recommendations pertaining to subsequent email collaboration projects are also made. First, a less restricted schedule of email exchanges should be utilized. The fixed schedule of three exchanges was utilized in the current project to insure no student was left out. However, such limitations seem to run counter to the ever-present nature of email communication. An unlimited number of exchanges across a longer duration of time should be explored to allow individual student participants to tailor the project to their own needs and all participants should have needed contact information to re-establish contact in the likely event of missed exchanges.

Lastly, the technical difficulties of distant collaboration for technology should not overshadow the benefit of such projects. In spite of the frustrations which accompanied the logistics of such networks, all participants involved expressed a desire for continuation of such projects.

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# Innovative Software-based Strategies for Reading/Listening Comprehension: how Information Technology is Reforming Foreign Language Acquisition

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**Abstract:** This paper presents supporting background information for the interactive session where the actual hands-on use of reading/listening comprehension software has taken place. To provide the larger context for using IT (Information Technology) software, the methodological and theoretical framework of IT is discussed, from the viewpoint of SLA (Second Language Acquisition) theory and practice. By training SLA teachers to delegate the more mechanical "programmable" linguistic skills to CALL (Computer Assisted Language Learning) software, more emphasis can be placed on the practical aspects of language use and language socialization, and acquisition of cross-cultural interaction skills. Emphasized is the role of IT-based reading and listening comprehension tools that enable the learner to work independently with authentic foreign language texts from the Internet.

## Introduction

In my work as a teacher of the English language in China and a teacher of the Chinese language in Canada, I have witnessed a wide spectrum of phenomena in language teaching, methodology and foreign language didactics, ranging from the rote learning of vocabulary from word lists to computer-based courseware. No doubt, computer-based instructional technology and educational media have gone a long way during the past decade, since the outlook given by Last (1992) on computers and language learning. In my Master's thesis (Zhang, 1997) I emphasized the importance of a needs analysis for IT-based language instruction, while in my present doctoral research I lay stress on the cross-cultural component of communicative competence, and on the communicative aspects of language socialization (Lazaraton, 1995). Employing IT in language teaching benefits teachers and students, because more time and effort can be devoted to issues of language use in a naturalistic environment (Tesch, 1990), in particular to the issue of cross-cultural understanding in real life settings. Thus, my message to language teachers and students alike can be summarized: making full use of interactive multimedia computer technology, both in the authoring of teaching materials, in language teaching and learning itself and - the special concern of this paper – in using analytic software tools for the acquisition of reading/listening comprehension skills, allows teachers and students to focus their attention on issues of the students' language socialization.

## The Dichotomy in SLA

For a brief background overview, let us for the moment disregard instructional technology and other IT aspects and look at the area of SLA. In the theory and practice of SLA we are confronted with a deep-rooted dichotomy: on the one hand, there is an understanding of language as closed system of formal knowledge (Chomsky, 1965) that allows the learner to generate grammatically correct sentences; on the other hand, Hymes (1970) and his followers view language as social behaviour, thus including the cultural aspects of language communication. Both interpretations of language have their advocates among the practitioners of language teaching, and both views are reflected in the design of language courseware that has been published during the past decade, as will be discussed in the next chapters.

Within a theory discussion of the background in SLA, another dichotomy must be mentioned: the polarization in research methodology, resulting in the diametrically opposed quantitative and qualitative approaches. Although the boundaries are not always sharp and clearly cut, in general the linguistically oriented researchers favour quantitative research methods, and they outnumber the qualitative researchers who have an ethnographic orientation. In her discussion of applied linguistics, Davis (1995) points out that the social and cultural aspects of language acquisition have been considered less important than the mental processes involved in language acquisition. SLA studies usually do not have a sociological orientation, and many sociolinguists use methods from psychology, and have a positivist perspective, collecting data through experimental techniques or surveys, and analyzing the data through statistical methods. In the SLA discussion among these different schools, the opinion of Lazaraton (1995) stands out: she advocates the principle of Language Socialization, which is defined as language use in non-instructional, real-life settings – the opposite of language acquisition in a controlled, pre-programmed environment that is based on the quantitative testing of linguistic skills. This reflects the concern of the functionalists' view of language "what is language for?" instead of the formalists' concern "how is language learned?"

Firth & Wagner (1997) point out that in traditionally oriented language SLA research the social factors of emic relevance are neglected, and that most socially and contextually oriented studies relating to language research tend to take the formal learning environment, typically the second and foreign language classroom, as the point of departure. They further lament that although second and foreign language interactions occurring in non-instructional settings, such as in the workplace, are everyday occurrences, but they have not yet attracted the attention of SLA researchers. Such views are motivating language teachers and educational experts to re-think and renovate existing SLA syllabi that are built on traditional designs and traditional methods; courseware that is technology-based may sometimes be merely a presentation of old contents in a new-looking hi-tech wrapping.

## From Courseware to IT Language Learning Tools

The concept of "Information Technology" (IT) as it is used in this paper within the SLA context, particularly for the acquisition of reading and listening comprehension in the foreign language, does not necessarily include all computer-based courseware. In order to call itself IT-based, a learning program has to take advantage of certain capabilities that are inherent in computer technology, especially computer software, such as electronic search functions and interactive multimedia features that allow learners to dynamically interact with the foreign language text they are trying to understand. For example, a CD-ROM-based program that presents text in static format, using the same linear programming as in a book, would not be included in this concept of "IT", because it would miss the dynamic factor.

In order to illustrate the general focus of discussions in CALL (Computer Assisted Language Learning) literature, we take a look at a few samples of such discussions. A relatively early (1992) overview of the area of CALL covers the time since the first experiments with simple tutorials in the mid-1970s, commenting in great detail on the simple linear interaction in tutorial mode between the learner and the computer. "This simple tutorial mode of interaction formed the basis of the first generation of CALL software, although the ingenuity of the software writers caused it to extend far beyond the question-and-answer mode ... ...the issue rapidly broadened into a recognition of the importance of the user interface as a whole in promoting good CALL practice and encouraging the learner to treat the computer as a reliable and non-threatening tutor" (Last 1992). Describing the desirable and undesirable features of a CALL software package, a higher degree of flexibility in the course design is then suggested. "... there should be a feeling of flexibility in the package as a whole; in other words, many packages have an extremely limited form of interaction. A word is flashed on the screen and you have to offer up the Spanish or French or German for that word. Nothing else is on parade - no contextualization, no tests of the gender, no listing of synonyms, no help panels, and in such circumstances the poverty of the learning environment soon causes the learner to tire of what ought to be recognized as a highly intensive interactive mode" (Last 1992). A further concept which considered to be a successful computer application is the field of clozentropy (gap testing), with the goal of improving the learner's inferencing ability, or guessing strategy. The author concludes the article by stating that CALL has still not achieved the critical mass of a mature and universally supported discipline, and there are still many in the profession "who are frankly suspicious that the computer is being applied to teaching the wrong things in the wrong way" (Last 1992, pp. 227-245).

An article by Zekulin (1993) about instructional computer technology was published in a collection of papers from the International Colloquium on the Teaching and Learning of Modern Languages held at the University of Ottawa in 1993. The author draws from his experience with the computer language lab at the University of Calgary. Since 1991 when the lab was established, students of first and second year Russian and Japanese use the computer lab as a part of the regular course requirement; starting in 1992, computer exercises for first and second year Chinese were introduced. Students also use the lab on a drop-in basis for self-study. The article warns against the numerous pitfalls the course designer of a language course might encounter. CALL is described as a highly labour-intensive approach to learning a language, the importance of efficient courseware is stressed, and the difficulties are mentioned for using a cognitive approach to L2 learning on the computer. "A number of people originally welcomed CALL because they saw it as a means of relegating repetitive and therefore boring tasks to the computer. This ignores the fact that if the task is boring for the instructor, it is likely to be boring for the student and is therefore unlikely to be pedagogically effective. Computer exercises are excellent for pattern accustomization, but rather more tricky for assisting with intellectual understanding. This problem can be exacerbated by the fact that students often ignore instructions and explanatory screens that precede the exercise in their eagerness to 'get on with the exercise itself', and, furthermore, in doing computer exercises, some students are primarily interested in right and wrong answers, less in why a particular answer is right or wrong." (Zekulin 1993). Guidelines for courseware design are: the screen should not just be treated as an electronic book; attempts to emulate computer games in CALL courseware are "doomed to failure (we cannot match the arcade), while in fact disguising the seriousness of what we are doing", and "careful design regarding the length of one exercise; dividing long exercises into several shorter ones has proven effective" (Zekulin 1993, pp. 230-238).

In their recent quantitative study, Herron et al. (2000) measure whether and to what extent a video language course can teach overall cultural knowledge, and their results support that video is an effective technological tool for presenting culture in the FL classroom. However, after mention of several references corroborating this view, we find a warning about possible interferences between the visual component of the video and the learner's comprehension. "However, this positive view of using video to teach culture is not unanimously shared. It could be that the first time students watch a video, the processing of syntactic information could place such a high cognitive demand on the students that they are unable to process any other kind of information (e.g. cultural information). This processign problem is one of the major tenets of the capacity theory of text comprehension (Just & Carpenter, 1992). According to this theory, it may be overly optimistic to think that first semester French students will be able simultaneously to process both the linguistic and the cultural information from an authentic video" (Herron et al. 2000, p. 397).

All these discussions are about designing learning programs, and writing and handling content. It is the goal of my presentation to add to the discussion with the concept of an analytic instrument in form of an IT-based "Comprehension and Learning Tool", which I perceive to be the application of the future in IT-oriented SLA operations. Undoubtedly courseware may have its purpose at an introductory level, but at the same time a universally applicable reading comprehension tool should be given to the language learners as early as possible, enabling them to learn reading foreign language texts of their choice in an independent manner, from the largest pool of electronic text available: the Internet. "Software selection is one of the first tasks in establishing a CALL program. A considerable literature exists which offers advice to teachers on how to choose software that will be suitable for their students, syllabus and curriculum. On the other hand, the actual dynamics of software acquisition, while mentioned occasionally in the literature, has not, to our knowledge, been studied in detail" (Robb & Susser 2000, p. 41). Regarding IT in SLA, we have to think beyond electronic courseware, by using analytic, text-exploratory comprehension learning tools, for an independent, student-centered CALL approach, as an important supplement to the existing courseware.

## IT in SLA: Comprehension Learning Tools

We now investigate the ultimate concept of "IT in SLA" which I demonstrated in my interactive session and which is in the focus of this paper: combining the principle of language use in naturalistic, real-world settings with the analytic power of computer software. In addition to the courseware with its predetermined content, the language student should be given a "content-free" language comprehension and language leaning tool that is universally applicable to any foreign language text in electronic format. The main

intention here is to lead the students to an authentic real-world context. I demonstrated this principle in my interactive session through the KEY software (detailed instructions for computer-assisted text analysis see on the "Multimedia" page of www.cjkware.com), as an example of an IT tool for learning to read and comprehend foreign language text. Such software tools enable even beginners to independently develop a reading and listening comprehension of foreign language texts. The interactive session demonstrated how an analytic software tool can benefit teachers and students through

- Opening the door to information that is written in a foreign language
- Acting as the key to reading foreign language content on the Internet
- Allowing language learners to independently acquire reading and listening comprehension skills in a foreign language, at an early level
- Doing away with rote learning of vocabulary: whether using the software tool to read Chinese (as demonstrated in the interactive session) or English (within ESL) or any other language, students can devote more time and effort to reading about their subjects of interest in the second language
- In the case of Chinese, automatically bridging the gap that exists in the written Chinese language between traditional characters (used in Hong Kong, Taiwan and the overseas Chinese communities) and simplified characters (used in China and Singapore)
- Enabling non-English readers to read English newspapers, magazines and other publications.

## Conclusions

Based on the principle of language socialization, IT in foreign language learning that combines content-oriented courseware with multimedia comprehension tools is ideal for language learners to achieve reading/listening comprehension skills. Having powerful analytic software tools at hand helps students apply confidently the knowledge and skills they acquired in content-based language courses, when they encounter real-world authentic text environments, which would otherwise intimidate them. For the reader who ventures out into the ocean of the foreign-language Internet, such tools are a reliable floating aid.

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